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KENILWORTH MODEL SANITARY LANDFILL, INTERIM REPORT ON A SOLID WASTE DEMONSTRATION PROJECT, DECEMBER 1967-JANUARY 1969

District of Columbia Department of Sanitary Engineering
Washington, D. C.

1969

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KENILWORTH

MODEL SANITARY LANDFILL

Interim Report
on a Solid Waste Demonstration Project
December 1967--January 1969

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
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Environmental Control Administration

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The material that follows, with minor exception, has been published as received from the grantee, but for pages 1 and 2 of the progress report, and the addition of a title page, foreword, and abstract.

Since this is an interim report of progress, the conclusions and recommendations presented should be considered as preliminary in nature, pending completion of the project and final evaluation of findings.

Mention of commercial products does not imply endorsement by the U.S. Public Health Service.

KENILWORTH

MODEL SANITARY LANDFILL

Interim Report

on a Solid Waste Demonstration Project

December 1967--January 1969

Prepared by the Department of Sanitary Engineering,
District of Columbia, under grant No. 1-D01-UI-00143
from the Bureau of Solid Waste Management

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Consumer Protection and Environmental Health Service
Environmental Control Administration
Bureau of Solid Waste Management
1969

FOREWORD

An estimated 900 million pounds of solid wastes of all types are produced in the United States every day. What to do with these solid wastes, how to dispose of them without needlessly endangering public health and welfare, and how to recover and reuse valuable materials now "thrown away" are among the most challenging and perplexing of current national problems. Because of lack of suitable planning, interest, and public understanding, these problems have reached such proportions that nationwide attention is demanded, and action for the development of adequate solutions must be taken.

Intensified action concerning these problems was made possible by the Solid Waste Disposal Act (Title II of Public Law 89-272) signed by the President on October 20, 1965. This legislation directs the Secretary of the Department of Health, Education, and Welfare to initiate, encourage, and support a national program aimed at discovering and evaluating better methods of coping with the solid waste problem.

The Secretary is authorized: (1) to conduct and support research on the nature and scope of the problem, on methods of more safely and efficiently collecting and disposing of solid wastes, and on techniques for recovering from solid wastes potentially valuable materials and energy; (2) to provide training and financial and technical assistance to local and State agencies and other organizations in the planning, development, and conduct of solid waste management programs; (3) to encourage and support projects that may demonstrate new and improved methods of solid waste collection, handling, and disposal.

To carry out these responsibilities, the Bureau of Solid Waste Management was established. Among the responsibilities with which the Bureau is charged is that of providing grant support for demonstrations relating to the development and application of new and improved methods of solid waste collection, storage, processing and ultimate disposal; and

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also for studies and investigations that may lead to a demonstration of improved disposal practices, or may provide solutions for regional or national solid waste disposal problems. Associated with this is the responsibility of collecting and making available by appropriate means the results of, and other information pertaining to, such federally supported demonstrations, studies and investigations.

Accordingly this report has been reproduced to disseminate as widely as possible the latest available information and findings of a project that has received grant support from the Bureau of Solid Waste Management. It is hoped that it will provide those working in this field with useful information that will be of assistance in developing approaches to the solutions of their solid waste disposal problems.

The Kenilworth Model Sanitary Landfill Project is one very tangible result of the Conference on Solid Waste Management for Metropolitan Washington called by the Surgeon General in 1967. At that Conference it was proposed that the ugly burning Kenilworth Dump, which had long befouled the air of our Nation's capital, would be converted to a sanitary landfilling demonstration for community improvement. This publication is an interim report of the progress made on the project during the period from December 1967 to January 1969. Additional work is currently underway to complete the project. In addition to the summary progress report of January 2, 1969, this publication contains Kenilworth Sanitary Landfill Final Plan--Design, Procedures, and Operating Requirement Specifications, February 1968, and Bid Proposal and Specifications for the Kenilworth Model Sanitary Landfill Project--Invitation No. C--6898-S. The two latter documents, although developed exclusively for the Kenilworth Project may be of interest and value to others planning sanitary landfill projects. The Bureau of Solid Waste Management would like to point out that the arrangements by the District to purchase equipment through the contractor differs from the normal procedures for obtaining equipment of this type. Arrangements for purchase of equipment upon completion of the project was the responsibility of the District and not included in the Federal grant project. Additional progress reports will be made available by the Bureau of Solid Waste Management, and the final report will be issued as a Public Health Service publication.

--RICHARD D. VAUGHAN, *Director*
Bureau of Solid Waste Management

ABSTRACT OF DEMONSTRATION OF THE USE OF MODEL SANITARY LANDFILLING METHODS TO CONVERT OPEN DUMP TO RECREATION AREA

PROJECT TYPE: Demonstration GRANT NO: D01-UI-00143

GRANTEE: Department of Sanitary Engineering, Government of the District of Columbia

PROJECT DIRECTOR: Robert R. Perry, Deputy Chief, Division of Sanitation,
Department of Sanitary Engineering, Government of the
District of Columbia
14th and E Streets, N.W., Washington, D.C. 20004

ESTIMATED TOTAL PROJECT COST: $1,100,000

GRANTEE'S SHARE: 366,667

FEDERAL SHARE: 733,333 [01]
(by year of project life)

DATE PROJECT STARTED: Dec. 1, 1967 DATE PROJECT ENDS: Aug. 31, 1969

OBJECTIVES: To demonstrate how open dumping and burning of trash can be eliminated, and the site of the burning and other small tracts of land, within densely populated metropolitan areas, can be reclaimed for recreational use utilizing model sanitary landfill methods.

PROCEDURES: The District of Columbia has discontinued open burning of solid wastes at the Kenilworth site and is in the process of converting it to a recreational area through the use of model sanitary landfill methods.

Consulting engineering services are being furnished by the firm of Whitman, Requardt and Associates, Baltimore, Maryland. The consulting firm was responsible for the planning and development of specifications for a model sanitary landfill to permit the ultimate development of the site as planned by the National Park Service and the District of Columbia Department of Recreation. The consulting firm is also providing engineering inspection services to assure that the plans and specifications are followed in detail.

A contract was executed on March 5, 1968, for the actual operation of the sanitary landfill with Curtin & Johnson, Inc.-Landfill, Inc. The sanitary landfill operator had responsibility for obtaining the necessary

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equipment and is responsible for operating the landfill in accordance with the approved engineering specifications.

Lands to be used for the sanitary landfills will be made available by the National Capital Parks. The ultimate use plans will be developed by the National Park Service and the District's Department of Recreation. As the landfilling is completed, the National Park Service will develop the Kenilworth Park site facilities.

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Special Conditions
Special Stipulations
Equipment
Measurement and Payment

GOVERNMENT OF THE DISTRICT OF COLUMBIA
EXECUTIVE OFFICE
WASHINGTON, D. C. 20004

WALTER E. WASHINGTON
MAYOR-COMMISSIONER

February 4, 1969

The Honorable Robert H. Finch
Secretary of Health, Education
and Welfare
Washington, D.C. 20201

Dear Mr. Secretary:

It is with a great deal of pleasure that I have watched Kenilworth being transformed from an open burning dump to a model sanitary landfill and see the beginning of a beautiful park for all of our citizens to enjoy. The enthusiastic endorsement of the project by the local citizens makes me hopeful that the sanitary landfill method can be at least a partial answer to our ever increasing solid waste disposal problems and those of other cities having problems. The cooperation that we have received from the National Park Service has been most gratifying and it now appears that our results at Kenilworth may lead to further joint ventures mutually benificial to both agencies and to the people of this area.

The Public Health Service demonstration grant of $733, 333 made the project financially possible for the District Government. The technical assistance of the Service in the program has also been helpful to our engineering and operating personnel and has maintained a

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very necessary focus on the project both regionally and nationally. The Kenilworth project demonstrates what can be done when there is a determination to find a solution to the problem and when adequate funds are made available.

Enclosed is a progress report which describes the background leading to the Kenilworth Model Sanitary Landfill and a brief discussion of our first ten months of operation.

Sincerely yours,

Walter E. Washington

Walter E. Washington
Mayor

Enclosure

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KENILWORTH MODEL SANITARY LANDFILL

Progress Report

I. Introduction

In 1942 the District of Columbia began using a low area on the east side of the Anacostia River in a section of the District known as Kenilworth for the disposal of solid wastes. Refuse production had exceeded the capacity of the two existing incinerators and wartime restrictions prevented new construction. The wastes were burned in the open to conserve the available volume and thus began 26 years of open dumping and burning 3 1/2 miles from the Nation's Capitol.

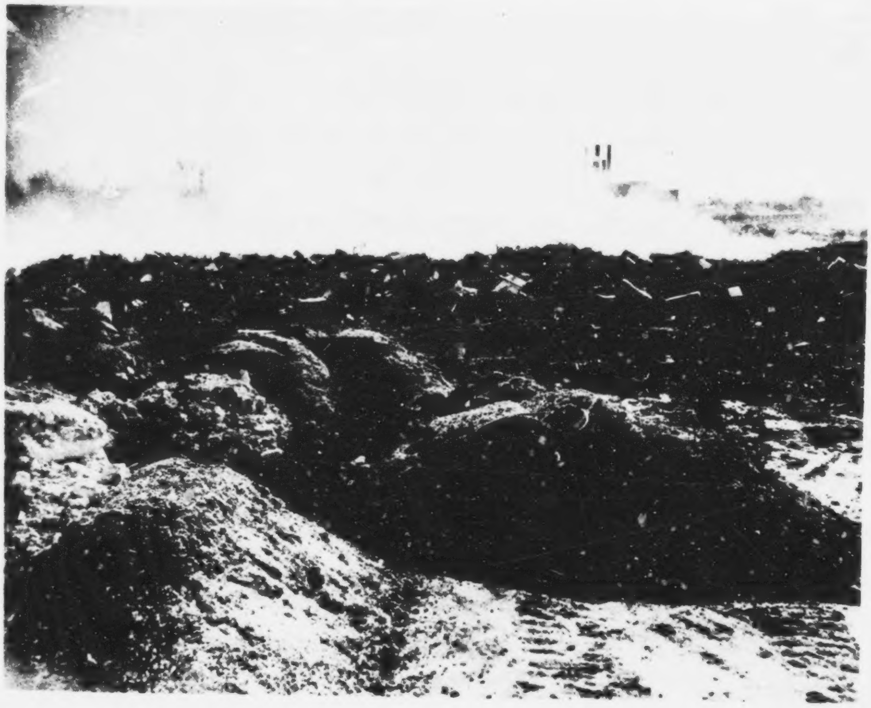


Figure 1. Kenilworth burning dump

New incinerators were constructed in 1955 and 1961 but the increased production of solid wastes always managed to outdistance the increased incinerator capacity. Funds were appropriated by the Congress in Fiscal Year 1964 for the construction of a fifth incinerator, but site location difficulties delayed final planning. Early in 1966 the Department of Sanitary Engineering began investigating the sanitary landfill as an interim disposal method in order to cease the open burning at Kenilworth. In 1967 the Department obtained the D.C. Commissioner's approval to utilize District-owned property at Muirkirk, Prince George's County, Maryland, as a sanitary landfill and funds were requested for the construction of a transfer station, transfer vehicles, and landfill equipment to utilize this site. Prior to the time these funds were obtained, however, the Maryland legislature passed an act requiring the approval of the County Commissioners to haul refuse over the highways from outside the County. A request was made by the District to Prince George's County for this approval, but no action was ever taken by the County Commissioners.

The Department had been negotiating with the National Park Service, Department of Interior, owner of the Kenilworth site, to increase and broaden the previously established final grades to permit Kenilworth to be used for a sanitary landfill for a period of 12 to 15 months. A formal announcement by the Department of Interior allowing the District to increase elevations and operate the site as a sanitary landfill was made on October 1, 1967. A tentative goal to cease open burning was set as January 1, 1968. The residents of the metropolitan area had the usual misunderstandings relative to sanitary landfills and as a result there was some opposition. Since the District was of the opinion that sanitary landfilling was the best solution to its immediate solid waste disposal problem the decision was made to operate a model facility with maximum publicity. It was believed that such a demonstration would soften public objection to other sanitary landfills in the metropolitan area.

The District had no personnel trained in sanitary landfill operations and the scarcity of properly operated sanitary landfills in the eastern part of the United States made it improbable that they could obtain such personnel. Time was not available for training. For these reasons the District decided to operate the landfill by contract.

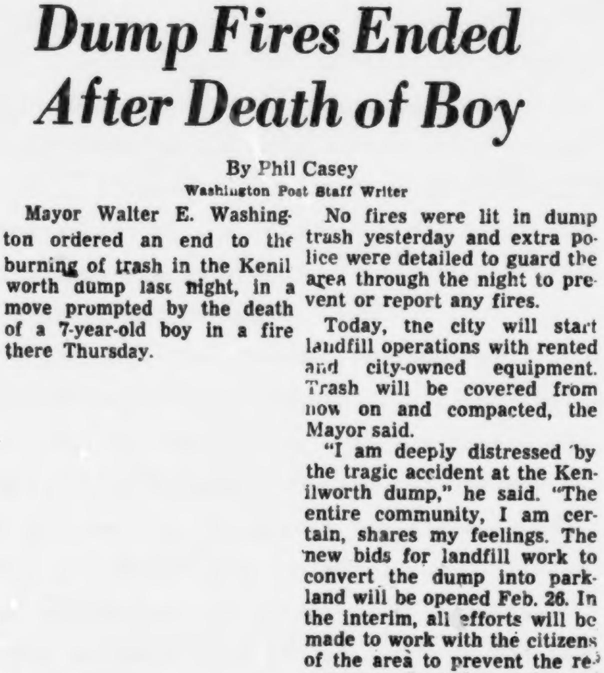
After reaching agreements with the Department of Interior for continued use of the site and formulating preliminary plans for operation of the site, the District made application to the Department of Health, Education, and Welfare for a demonstration grant. The application which was submitted to the Public Health Service, Bureau of Solid Waste Management, proposed to demonstrate how open dumping and burning of trash can be eliminated and the site of the burning dump can be reclaimed for recreational use utilizing model sanitary landfill methods. The District received formal notification of approval by letter from the Public Health Service dated November 24, 1967. A grant award statement was issued concurrently authorizing work on the project beginning December 1, 1967, subject to the contingency that the Bureau of Solid Waste Management would have an opportunity to review and approve the final plans and specifications developed for the project.

The initial bid proposal and specifications drafted by the District was based on obtaining a knowledgeable contractor, and an experience clause was included which required the bidders to have had 3 years experience in landfill operations. After bids were received, it was found that the lowest bidder could not meet the experience requirements. When the District attempted to award to the second lowest bidder, a protest was entered with the General Accounting Office. On January 11, 1968, the District was advised by the General Accounting Office to provide more detailed specifications and re-advertise the contract. At this time final development plans had been prepared by the District's consultant and reviewed and approved by the Public Health Service and the National Park Service, so in accordance with the recommendation of the General Accounting Office, detailed plans and specifications were prepared and bids received on February 26. On March 5, 1968, an award was made to Curtin and Johnson, Inc.--Landfill Inc., for the operation of the Kenilworth Model Sanitary Landfill.

II. Emergency Landfill Operations

The requirement by the General Accounting Office that the Kenilworth landfill specifications be rewritten and re-advertised made it impossible for the District to meet its original goal to cease open burning by January 1. As the project was again prepared for advertisement a new target date of April 1 was established.

On the night of February 15, 1968, a seven-year-old child was tragically burned to death at Kenilworth while looking through refuse for bicycle parts. The next day Mayor Walter Washington ordered all open



Dump Fires Ended After Death of Boy

By Phil Casey
Washington Post Staff Writer

Mayor Walter E. Washington ordered an end to the burning of trash in the Kenilworth dump last night, in a move prompted by the death of a 7-year-old boy in a fire there Thursday.

No fires were lit in dump trash yesterday and extra police were detailed to guard the area through the night to prevent or report any fires.

Today, the city will start landfill operations with rented and city-owned equipment. Trash will be covered from now on and compacted, the Mayor said.

"I am deeply distressed by the tragic accident at the Kenilworth dump," he said. "The entire community, I am certain, shares my feelings. The new bids for landfill work to convert the dump into parkland will be opened Feb. 26. In the interim, all efforts will be made to work with the citizens of the area to prevent the recurrence of another such tragedy."

--Reprinted with permission from
The Washington Post, February 16, 1968.

burning at the Kenilworth site to cease immediately and emergency sanitary landfill operations begun. A list of equipment and a plan of operation was prepared by the District and its consultant outlining what would be necessary to carry out the emergency sanitary landfill until such time as a contract could be awarded and the new contractor could take over daily operations. The following equipment was either available in the Sanitation Division or rented with operators from a local contractor.

(a)	1 Rex Compactor	Sanitation Division
(b)	2 Allis Chalmers HD-11 Dozers	Sanitation Division
(c)	1 Dual Nozzle Street Flusher	Sanitation Division
(d)	1 Motor Patrol Grader	Sanitation Division
(e)	2-14 cubic yard Scrapers	Rental Contract
(f)	2 D-8 Caterpillar Dozers	Rental Contract
(g)	1 977 Caterpillar Track-mounted Loader	Rental Contract

Work continued Saturday, February 17, and Sunday, February 18, in an effort to quench the fires and prepare an area for sanitary landfill operations. An area was selected north of Watts Branch Creek, a small stream which traverses the Kenilworth site. This allowed the entire south side to remain free for clean up operations by the landfill contractor and permitted him to meet the April starting date.

The District landfill operations began by using the ramp method. With this method less preliminary work was required in order to prepare an area for immediate use. However, after two weeks it was obvious that the site selected was not large enough and that further refuse deposits would violate the final grades established by the Park Service Development Plan. Adequate equipment and supervision was then available to operate the trench method in an area further north on the site. The area selected had once been used as part of the open burning dump, but had been filled in with earth by the National Park Service several years previously. Trenches were staked out having a width of 40 feet and a length of approximately 600 feet. The trenches were then excavated to the old ash residue. The depth of the trenches varied from 8 to 13 feet. Earth removed from all trenches was stockpiled at one location and used, as required, for daily cover (Figures 2 and 3). The trench method of operation was found to

Figures 2 and 3. Emergency landfill operations.

BOWEN PAPER CO.

have many advantages over the ramp method. The most important advantage, during these early days, was confining the operation. There was considerable wind during the month of March and the trench operation allowed the operators to more easily control blowing paper. Although actual compaction calculations were not made during this period, the operation of the Rex Compactor and one D-8 Caterpillar in the trench appeared to provide excellent compaction. The greatest difficulty encountered with the trench operation was drainage. The terrain was such that most of the trenches could be drained to an adjacent watercourse during excavation and prior to use. When this was not possible the trench would become unusable following a rain.

The trenches were excavated in alternate sequence allowing for dumping and maneuvering space for incoming trucks. A wall of undisturbed earth three feet wide at the top was maintained between trenches. Although the excavation was fill material there was no problem with the collapse of these walls.

The District's emergency operations ended on April 2, 1968. On this date the contractor, Curtin and Johnson, Inc.--Landfill, Inc. began landfill operations on the south side of Watts Branch Creek. During the District's six weeks of emergency operations 38,600 tons of refuse and 23,100 tons of incinerator residue were disposed of at the Kenilworth site. The operation was in accordance with the National Park Service Development Plan and had been accomplished without serious incident, during severe winter weather, by personnel untrained and unfamiliar with sanitary landfill methods. In order to obtain these results, however, key personnel were diverted, full time, from other important departmental functions. These men were required in their regular positions and their continued employment at the landfill was not possible.

III. Award of Contract

On March 5, 1968, the contract for the operation of a model sanitary landfill at Kenilworth was awarded to Curtin and Johnson, Inc.--Landfill, Inc. Curtin and Johnson, Inc. is a local paving and sewer contractor and Landfill, Inc. of Denver, Colorado, had operated a private landfill in Denver approximately two years. (The new specification, relative to required landfill experience, required that the bidder shall have "operated for a sufficient period of time to have experienced a complete cycle of seasonal variations in climate and municipal solid wastes characteristics---".)

The contract schedule of prices is as follows for the 18-month contract period:

SCHEDULE OF PRICES

Item	Quantity	Item Description	Unit Price	Amount
1	----	Site preparation including vector extermination, entrance beautification, access road construction, physical facility installation and removal, extinguishing of existing fires, covering exposed refuse and residue, etc.	Lump sum	$100,000
2	----	Rental for physical facilities including scale office, general office, sanitary facilities, equipment maintenance building and other temporary structures	$2,000/per month	36,000
3	----	Required Equipment	$23,293.33/month	419,280

Item	Quantity	Item Description	Unit Price	Amount
4	----	Equipment inspection, maintenance and repair	$1,000/month	$ 18,000
5	280,800 tons	Disposal of the basic quantity of miscellaneous mixed refuse including rubbish, garbage and other discarded items of general trash--3600 tons/wk	$2.17/ton	609,336
6	70,200 tons	Disposal of the miscellaneous mixed refuse quantity in excess of the basic quantity listed in Item 5	$1.86/ton	130,572
7	280,800 c.y.	Disposal of incinerator ash residue	$0.6[illegible]/cu yd	182,520
8	300 acres	Site completion including fine grading, fertilizing, seeding and maintenance of grass	$400/acre	120,000
9	----	Moving operating facilities to another site	Lump sum	10,200

The Kenilworth contract provides for these services or equipment:

(1) Disposal of refuse and incinerator residue for a basic period of 18 months (540 days) either at Kenilworth or at Oxon Bay (an additional National Park Service site) with the District having the option to extend the period for an additional 6 months (180 days) at either site. The contractor is to be guaranteed payment for 3600 tons of refuse each week.

(2) Provide temporary facilities for field offices, scale office, sanitary facilities and equipment maintenance on a monthly rental basis. Except for equipment maintenance facilities, trailers were used for these installations. The life of the Kenilworth project will be relatively short and trailers, which could be moved to a new location, appeared to be a satisfactory solution to the building problem.

(3) Furnish various pieces of landfill equipment. Detailed specifications were provided for each item in the bid documents. The contractor is to use this equipment in the operation of the landfill. Upon completion of the contract the equipment will become the property of the District of Columbia. The contractor is required to perform maintenance in accordance with manufacturer's recommendations and provide for an inspection and written report to the District from each equipment supplier every 60 days or 250 hours of operation. The contract does not guarantee that the equipment specified is adequate for the proper operation of the landfill at all times. The contractor must furnish any additional pieces required for the proper operation and all necessary standby equipment.

	Required	Furnished
(a)	Motor grader	1-Galion Motor Grader, Model 118 Series B
(b)	Sanitary landfill compactor	2-Rex Trashmasters, Model TRM-340
(c)	5-yd, rubber mounted, front-end loader	1-International Hough, Model H-120-C

	Required	Furnished
(d)	Tractor dozer, track-mounted	1-International Harvester, Model TD-25-C
(e)	14-18 yd, Self-propelled scraper	1-International Harvester, Model No. 270
(f)	Water tank wagon	1-Roscoe Flusher Model MTA-3-2500 gallon mounted on a Ford Chassis, Model C-850
(g)	Fuel servicing unit	1-Lubrication Unit, Lincoln Mfg. Co. mounted on a Ford Chassis, Model F-600
(h)	Scales	2-Toledo Platform Scales-100,000 lbs. capacity

(4) Prepare the site prior to landfill operation. This item included extinguishing of existing fires, covering exposed refuse and residue, vector extermination, entrance beautification, extension of the necessary utilities and the construction of access roads and berms as required.

(5) Fine grading, fertilizing, seeding and maintenance of grass.

(6) Moving operating facilities to Oxon Bay.

IV. The Kenilworth Development Plan

The plan for operation of the sanitary landfill and the future development of the area by the National Park Service was completed early in February 1968. The plan outlines in detail how the daily landfill operations are to be carried out by the contractor, establishes a sequence of areas to be filled, outlines in general where more than one lift of refuse will be required, and establishes the final contours of the finished landfill.

One unique feature of the plan is the requirement that all areas proposed for park roadways and parking lots will be filled with incinerator residue. Thus settlement under future pavement should be minimal, and satisfactory results can be obtained with a flexible pavement type construction.

In developing the grass turf on the completed landfill the contractor will use air dried sludge from the District's Water Pollution Control Plant. This requirement in the plan will aid in building top soil and will provide a means of disposal for another solid waste which has been a problem for the District.

The proposed Park Development Plan will provide picnic and playfield areas on the land south of Watts Branch Creek, a canoe center at the mouth of Watts Branch and the Anacostia River, demonstration gardens north of Watts Branch, and a developed recreational area at the northeast corner of the tract. Both the northeast corner and the southeast corner of the property are adjacent to elementary schools, which increases the value of this land for playfields or more formal recreational use. Swimming pools have been planned for both locations, these to be located just beyond the limits of the sanitary landfill.

At the extreme south end of the Kenilworth property, adjacent to a large Potomac Electric Power Company power plant, land has been reserved for the District to construct their new 1500-ton-per-day incinerator. This plant, although large for a municipal incinerator, will be dwarfed by the huge power installation. The incinerator will be attractively designed and will provide a transition from the park to the power plant. Traffic to and from the future incinerator will travel over a new road from the south and will not enter the park area.

The Kenilworth Development Plan was produced as a combined effort between the District's Department of Sanitary Engineering, the District's consultant, Whitman, Requardt and Associates of Baltimore, Maryland, the planning staff of the National Park Service and the District Department of Recreation. Close cooperation during all phases of the planning reduced disagreements and helped to develop an understanding and appreciation of the problems that each organization had.

Copies of the Kenilworth Plan and Specifications were previously submitted to the Solid Wastes Program, U.S. Public Health Service for their review and comments. The landfill operations have followed this plan and these specifications except for minor changes made necessary by field conditions.

V. Contractor Operations

Curtin and Johnson, Inc. - Landfill, Inc. began sanitary landfill operations in the area south of Watts Branch on April 2, 1968. They had begun a preliminary cleanup of this area a few days after the contract was awarded on March 5th. The cleanup included a complete rat abatement program over the entire Kenilworth site by a professional exterminator. Piles of burned or partially burned material were compacted and covered with 6" to 8" of earth. Although the District had spent some time in this area in mid-February extinguishing fires, more burning or smoldering spots were found as the contractor moved piles of metal and debris.

The contractor has used the area method of filling during his entire sanitary landfill operations thus far. Refuse is dumped from the incoming trucks at the bottom of the sloping face and compacted with the compactor dozers as they push the material up the slope. It was originally expected that the area south of Watts Branch would be completed in October or November. Test pits made earlier proved to be misleading and a considerable volume was made available for refuse disposal when earth from previously filled areas and some virgin areas was excavated to the limit. The limit of excavation was either burned residue or ground water. Where ground water was encountered a layer of several feet of earth was placed and compacted prior to the placement of any refuse. This additonal fill volume has allowed the landfill operation to continue south of Watts Branch and the area is not expected to reach final contours now until February or March 1969.

During the period of negotiations with the National Park Service and the development of the Kenilworth Plan, residue from the District's four incinerators was stockpiled north of Watts Branch. Adjustments were made in the plan to reduce the amount of this material which would have to be moved, but even after these changes it will be necessary to move 86,000 cubic yards of residue. A change order to the existing contract was negotiated, which provides for the removal of this material to the south side of Watts Branch, where it will be compacted in the areas set aside for incinerator residue. Moving the material south of Watts Branch has two advantages. It will allow the residue areas and the refuse areas on the south side of Watts Branch to be completed at about the same time; thus, this entire area will be available for Park Service development in the spring of 1969. Secondly, areas immediately north of the stockpiled material which are now designated in the plan for refuse fill can be saved for that purpose. It became apparent as the Kenilworth project developed that the volume under future roadways and parking lots which will be filled with residue will take longer to complete than the areas available for refuse. It is, therefore, to the District's advantage in extending the life of the landfill not to place any of the stockpiled residue in refuse disposal areas.

From April 2, 1968, to November 30, 1968, the District disposed of 182,000 tons of refuse and 255,000 cubic yards of incinerator residue or an average of 5,200 tons of refuse per week and 7,300 cubic yards of incinerator residue per week at Kenilworth. The amount of refuse is 15.3% in excess of the amount estimated when the project was developed. This excess was partially caused by the volume of debris which required disposal following the civil disturbances in Washington during April and the Poor People's March and encampment during the early summer. Noncombustible demolition material was not accepted at Kenilworth but was directed to another fill site. However, combustible material had to be disposed of at Kenilworth. Despite this additional volume the Kenilworth site is expected to last until September 1969 because of the additional space available south of Watts Branch.

A contract for the construction of the Watts Branch culvert was awarded to Hercules Construction Company on October 18, 1968, for $69,923. The structure is a reinforced concrete box culvert and will be completed by January 15, 1969.

An interesting program has been developed by the contractor and the District for calculating and checking the daily weights of refuse. The present scale heads in use at the landfill print the weight of the truck on a ticket. After being weighed "in" the driver is given the weight ticket which he must return to the scale operator on his way out. The ticket is printed with his "out" weight and deposited in a holding box for the day. At the end of each two week period the contractor submits to the District the weight tickets, packaged by days, the total weight deposited, and the total number of vehicles for each day of the two week period.

The District was then faced with the difficult task of checking the contractors calculations from an average of 7,200 weight tickets every two weeks. It was soon apparent that this required the services of a clerk almost full time. It was decided to have the information on the tickets (weight in, weight out and date) punched on cards, verified, and processed with a simple program on a computer. The cards are punched and verified by a private contractor at a cost of $8.69 per 1,000 tickets or about $5.20 per day (600 vehicles per day). The computer program has been written to provide the daily weights, the daily vehicle count, a weekly and monthly total weight, and amount due the contractor.

New scale heads are now on order which will allow the weights to be punched directly on a paper tape. The tape can then be sent to the District's computer section at the end of each day, thus eliminating the weight tickets and card punching. In addition, the new scale heads will provide for punching an identification of each truck, providing valuable information for operational control of the Sanitation collection services.

VI. Public Relations

An important aspect of the Kenilworth Model Sanitary Landfill Project was the need to demonstrate this method of refuse disposal to citizens in the Metropolitan Washington area. Not only did the general public need to be convinced that sanitary landfill was a satisfactory method of disposal for solid wastes, but it was also most important that the National Park Service and other federal agencies controlling open lands be convinced. From the beginning, Kenilworth has had an open door policy for citizens, either in groups or as individuals, and for the news media. There has been an active effort to encourage officials and others to visit the project. By December 1, 1968, 233 persons had visited the site and signed the guest book.

On Monday, October 14, Mayor Walter E. Washington was host for a special program, dramatized with a picnic lunch, attended by approximately 75 area residents, federal officials, and representatives of the Metropolitan Council of Governments. A tent was erected on top of the completed landfill near the working face and sawdust was spread over the ground. The theme of the program was "Kenilworth-Yesterday, Today and Tomorrow." Displays of photographs were set up around the tent showing Kenilworth as a burning dump, the landfill operation and Park Service plans and renderings of the future park. The program had excellent newspaper and television coverage and was well received by those in attendance.

MAYOR'S DAY

Figure 4. The Honorable Walter E. Washington, Mayor of the District of Columbia, greets guests at special program, October 14, 1968.

Figure 5. Norman E. Jackson, Head of the Department of Sanitary Engineering, District of Columbia, speaks to the approximately 75 area residents and officials who gathered for the picnic lunch.

An important item in public relations was the entrance beautification. When the area was operated as an open dump the entrance roadway was usually lined with private trucks broken down and waiting repairs or crews parked for a lunch break. A rail fence has now been constructed on either side of the paved entrance which confines the trucks to the main roadway and parking is not permitted. The berms have been seeded and brick entrance gates constructed about midway along the road with lettering identifying the site as the Kenilworth Sanitary Landfill. Low plantings and flowers were an added improvement this fall to the entrance gate.

Figure 6. The new entrance gate proudly identifies the model Kenilworth Sanitary Landfill.

The project to demonstrate the sanitary landfill as a satisfactory method of disposal would seem to have already had positive results for the District of Columbia. The National Park Service, which entered the original Kenilworth agreement as a skeptic, now appears satisfied that such an operation can be carried out in proper locations to benefit both the Park Service and the District. Negotiations are continuing between the District and the Park Service to reach agreement for the utilization of a sanitary landfill at the Oxon Bay site to develop an 18-hole championship golf course. The District is proposing to design the golf course and build the contours with a sanitary landfill operation scheduled to begin when Kenilworth is completed.

During the course of the Kenilworth project the District has kept in close contact with Mr. Stuart Finley, who is preparing a film on sanitary landfills. Mr. Finley's photographer filmed the emergency operations, some early days of landfill operations, and activities at the site on the Mayor's Day. It is understood that the film will be completed with scenes of the final development and use of the site as a recreation and park area.

VII. Summary and Conclusions

The conversion of the Kenilworth burning dump to a model sanitary landfill is a major success in the opinion of District officials and residents. The pall of smoke is gone and the fallout of charred bits of paper, which at times extended far into Maryland, has ended. There have been problems but solutions have been found as the project progressed.

Figure 7. After being crushed and spread by compactors with landfill blades (the equipment in background), the solid wastes were covered at the end of each day's operation with a minimum of 6 inches of earth (foreground).

The delay in not getting the landfill underway by the original target day of January 1, 1968, and the subsequent tragic death of the young child in the Kenilworth fires during February resulted in the project beginning under most unfavorable circumstances. However, the emergency operations during February and March were carried out without further serious incidents and the model operations were begun on April 2, 1968. Greater depths of previously filled earth than had been expected in the area south of Watts Branch have extended the life of the landfill by several months even though the daily incoming refuse has been 15.3% higher than originally estimated. The sanitary landfill at this site is now expected to be completed about September 1, 1969.

Costs have been higher than originally anticipated and are now expected to be about $3.30 per ton. This price per ton is based on the total project costs including the purchase of the equipment, and the estimated tonnage of refuse and incinerator residue which will be disposed of during the project period. Because of the classification as a "model" a considerable amount of money will have been spent to prepare the area for National Park Service development and the relatively short life of the fill causes these expenditures to have a greater impact on the price per ton. Compared to present District incinerator operation costs of $6.10 per ton, the landfill is still a bargain. A landfill located within a metropolitan area should be expected to be more expensive than one operated at some remote location, but the reduced hauling costs can justify these additional expenditures.

DISTRICT OF COLUMBIA

DEPARTMENT OF SANITARY ENGINEERING

KENILWORTH SANITARY LANDFILL

FINAL PLAN - DESIGN, PROCEDURES AND OPERATING REQUIREMENT SPECIFICATIONS

FEBRUARY, 1968

WHITMAN, REQUARDT AND ASSOCIATES
1304 St. Paul St.
Baltimore, Maryland 21202

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SECTION 1

INITIAL PREPARATION

1:01 **GENERAL:**

(a) The Contractor shall furnish and install all materials, equipment, and appurtenances necessary for the satisfactory operation of the Kenilworth landfill as described herein. Any materials to be furnished or supplementary work to be done by the District of Columbia will be so noted. The absence of any such notification will indicate that the material is to be furnished and placed, and the work done by the contractor.

1:02 **FENCING:**

(a) The Contractor shall furnish and install a chainlink fence around the periphery of the landfill site, as shown on the drawings. The total height of the fence shall be 7 feet, made up of woven wire fabric. The contractor shall furnish and install gates at the landfill entrance and at Foote Street as shown on the drawings. Exact gate sizes will be determined by the District in the field prior to installation.

(b) The fence shall consist of line posts equally spaced not greater than 10 feet on centers, corner posts, end posts adjacent to the gates, top rails with expansion sleeves, horizontal brace rails and diagonal brace rods in the corner and end bays and in bays adjacent to the gates, chainlink type wire fabric, tension wire near bottom of all fabric, and all other necessary accessories, such as posts tops, turnbuckles, brace and tension bands, etc.

(c) The fence shall be as manufactured by Page, Anchor Post, Cyclone, or approved equal, in accordance with the standard specifications for chainlink fence of heavy construction (9 gage minimum thickness). Fencing shall be erected by experienced fence erectors, approved by the District of Columbia.

(d) All parts of the fence and gate above or below ground shall be hot-dipped galvanize with the weight of galvanizing being not less than 2 ounces per square foot.

(e) The Contractor shall furnish a padlock for the gate with 6 keys. A No. 12 cadmium plated steel chain, 18 inches long, shall be fastened to the gate and the body of the lock.

1:03 SIGNS:

(a) A maximum of 5 signs will be placed at the site along the access road and in those areas so designated by the District of Columbia. These signs shall be a maximum of 4 feet x 6 feet in size and shall indicate the hours of operation, speed limits, ash disposal areas and other pertinent information. In addition, there shall be provided a sign designating this area as an HEW Demonstration Project as detailed on the attached sketch. Any additional signs deemed desirable for the control of the project by the Contractor shall be provided at no additional expense for approval by the Government of the District of Columbia.

(b) Signs will be constructed of 3/4 inch marine plywood with black lettering on white background. Signs will be painted by a professional sign painter in a craftsmanlike manner.

(c) Exact sign sizes and messages will be as specified by the District of Columbia and by the U. S. Department of Health, Education and Welfare.

1:04 ENTRANCE BEAUTIFICATION:

(a) It is the intent of this plan to provide an attractive entrance to the Kenilworth Sanitary Landfill.

(b) The Contractor shall construct a masonry entrance at a location agreed upon by the District in accordance with the attached plan.

1:05 CLEANUP AND PREGRADING:

(a) Prior to clean-up, the Contractor shall conduct a rodent extermination operation. A plan for the operation shall be submitted to the District of Columbia for approval before such operation is commenced. The Contractor shall clean-up the entire sanitary landfill site project area by transferring piles of refuse, dirt, ash, demolition wastes, etc., from alongside the existing access roads, water courses, and miscellaneous areas to the existing working face and incorporating this material into the landfill or shall grade, compact and cover with clean earth at the existing location of major deposits of such general debris.

(b) The existing access road and adjacent shoulders shall be graded so as to improve riding quality and provide proper drainage as detailed on the drawings. Side ditches shall be cut, where required, to permit drainage of storm water into existing or proposed channels, swales or ditches.

(c) The Contractor shall install temporary pipe culverts in the side ditches of the main access road to extend additional access roads to the disposal areas as required and directed by the District of Columbia.

(d) The District of Columbia will provide and install the proposed culvert in the vicinity of the proposed scale and service area, as shown on the drawing.

(e) The Contractor shall conduct the clean-up and pregrading operation in such a manner that Refuse Disposal Area I will be ready for immediate use upon implementation of the Sanitary Landfill plan. Existing refuse operations shall be diverted to Refuse Disposal Area II during this clean-up period as required. All pregrading shall provide for adequate surface drainage.

(f) During the clean-up and pregrading operation as specified, the Contractor shall extinguish all smoldering fires, and all recurring fires, by use of the water tank truck and cover material.

1:06 OPERATING FACILITIES:

(a) The Contractor shall furnish and install the following operating facilities at the Kenilworth Sanitary Landfill site, as shown on the drawings and specified herein.

1. Scales:

Two truck scales shall be furnished and installed. The Contractor shall submit shop drawings of the scales and scale pits to the District of Columbia for prior approval. Scales shall conform to the requirements as hereinafter specified.

2. Scale House:

A scale house shall be provided to serve both scales and shall be air conditioned, heated and ventilated to provide all weather use and protection for the weighmaster. The scale house shall be considered as a temporary structure, easily transported, and shall be a modern trailer or a prefabricated steel building having a minimum floor space of 250 square feet. The scale house shall include an office area, and a separate enclosed area containing one toilet, one lavatory, and one drinking fountain for the weighmaster. A drawing showing the proposed scale house shall be submitted to the District of Columbia for approval prior to installation.

3. Office:

An office shall be provided for management personnel at the Kenilworth Sanitary Landfill site. The office shall be considered as a temporary facility and easily transportable. The office shall be a modern office trailer, or a prefabricated steel building containing a minimum of 420 square feet and shall include adequate office space with desks for two District of Columbia employees. The office provided shall be of sufficient size for standard office desks, file cabinets, and minimum separately enclosed sanitary facilities consisting of one toilet, one lavatory, and one drinking fountain. The building shall be insulated, air-conditioned, heated and ventilated to allow all-weather use. A drawing showing the size, type, and manufacture of the proposed office building shall be submitted to the District for approval prior to installation.

4. Landfill Personnel Facilities:

A building housing landfill personnel facilities shall be provided and installed as indicated on the drawings. This building is to be considered as a temporary structure, modern, easily transported and shall be a trailer or a prefabricated steel building properly vented for intended use. The trailer provided shall contain a minimum of 12 metal wall lockers, two (2) toilets, one (1) urinal, two (2) lavatories, one (1) complete and enclosed shower, one (1) drinking fountain. The trailer furnished shall be insulated and heated to provide all-weather use. A drawing showing the size, type and manufacture of the proposed employee facilities shall be submitted to the District of Columbia for approval prior to installation.

5. Driver Facilities:

A building housing collection vehicle driver facilities shall be provided and installed as indicated on the drawings. This building is to be considered as a temporary structure, modern, easily transportable and shall be a trailer or a prefabricated steel building of sufficient size to contain a minimum of two (2) toilets, two (2) urinals, two (2) lavatories, one (1) drinking fountain, and be insulated, ventilated and heated for all-weather use. A drawing showing the size, type and manufacture of the proposed Driver facilities shall be submitted to the District of Columbia for approval prior to installation.

6. Maintenance Building:

The Contractor shall furnish and install a Maintenance Building to provide an all-weather enclosure suitable for maintenance operations on landfill equipment at the location shown on the drawings. The building shall be of a temporary structure and shall be a pre-engineered metal structure a manufactured by "Butler", "Stran-Steel", "Armco" or approved equal. The building shall have nominal dimensions of 30 feet x 30 feet and shall be heated for winter use, contain a workbench, lighting, and equipped with sufficient tools to allow equipment maintenance both day and night. A drawing showing the size, type, and manufacture of the proposed maintenance building shall be submitted to the District of Columbia prior to installation for approval.

7. Access Roads:

The Contractor shall provide, install, and maintain a parking area and access roads on the Kenilworth Sanitary Landfill site, as indicated on the drawings. These access roads shall be a minimum width of twenty-four (24) feet and shall be stabilized with calcium chloride, stone, gravel, and road oil, as approved by the District to provide all-weather roadability and assist in dust control. Any additional access roads desired by the Contractor and not shown on the drawings will require approval by the District of Columbia prior to construction.

8. Water Service:

The Contractor shall furnish and install sufficient water mains to provide water service to the office and service buildings. The tap shall be made by a licensed plumber in accordance with the regulations of the District of Columbia. The tap can be made near the existing fire hydrant in the vicinity of the sanitary landfill which will be designated by the District of Columbia for use by the Contractor and as shown on the drawings. Water will be furnished by the District of Columbia at no cost to the Contractor for his tenure of operation of the Kenilworth Sanitary Landfill.

9. Sanitary Facilities:

The Contractor shall furnish and install the necessary septic tank systems for use with the operating facilities described herein; to provide a satisfactory method for disposal of sewage wastes in accordance with the requirements of the District of Columbia. The septic tank system shall be approved by the District of Columbia prior to its installation. The septic tank system shall be removed by the Contractor upon completion of the sanitary landfill and as directed by the District of Columbia. There shall be no additional cost to the District for removal of these facilities. As an alternate, the Contractor may provide an ejector station and force main to Anacostia Avenue, in conformance with approved plans.

10. Lighting:

The use of set hours for operation of the Kenilworth Sanitary Landfill will preclude the necessity of providing for lighting the entire sanitary landfill site. However, the Contractor shall provide security lighting in the area of the scale house and office buildings as approved by the Government of the District of Columbia. In addition, the Contractor shall furnish portable lighting to enable use of the ash disposal area during the hours of darkness. The Contractor shall submit to the District of Columbia sufficient drawings, cuts and sketches to permit evaluation and approval of the proposed portable lighting equipment by the District of Columbia prior to usage.

SECTION 2

OPERATION

2:01 GENERAL:

(a) The Contractor shall conduct the operation of the Kenilworth Sanitary Landfill in accordance with the drawings enclosed as a part of these specifications, and as described herein. These specifications establish minimal operating requirements and conditions; any change in equipment usage or operating procedures desired by the Contractor must be approved by the District of Columbia prior to implementation.

2:02 STAKE-OUT:

(a) The District of Columbia will stake out the various ash disposal areas indicated on the drawings and sufficient survey points to enable construction of the Kenilworth Sanitary Landfill to the lines and grades indicated on the enclosed plans.

(b) Horizontal and vertical survey control points shall be established for contractural use by the District of Columbia. Extension of these points for daily use shall be the responsibility of the Contractor.

(c) Periodic checks of the construction grades, elevations and horizontal alignment of the sanitary landfill will be performed by the District of Columbia or their duly authorized engineers.

2:03 EXCAVATION OF COVER MATERIAL:

(a) Test pits were excavated by the District of Columbia indicating that most of the area is presently overlain with cover material to depths varying from 5 to 9 feet. Cover material shall be inorganic soil, free of putrescible material, refuse, trash, vegetation, stumps, logs, frozen material, concrete slabs or other demolition wastes; and it shall contain sufficient silt and clay size particles to retard and prevent rapid seepage of water through it when compacted.

Cover material will be obtained on site until such existing cover material is completely exhausted. Additional cover material, if required, will be provided at the sanitary landfill site by the District of Columbia. However, the Contractor shall notify the District of the requirements for additional cover material at least ten (10) working days prior to actual need. No cover material will be received at this site unless prior approval is received from the District of Columbia.

(b) Extreme care must be taken during excavation of this cover material so as to insure there remaining a minimum of one (1) foot of cover over existing refuse residue. The Contractor shall excavate test holes at frequent intervals to insure compliance with this requirement.

(c) Cover material will be excavated by use of a self-propelled scraper and stockpiled for future use in accordance with the plan of operation.

(d) Excavation will proceed from Disposal Area I through Disposal Area II in the sequence shown on the drawings included as part of this specification. Excavation of cover material will be conducted in such a manner to permit continuous surface drainage. Under no circumstances will low points or ponding areas be allowed on the fill as a result of cover material excavation.

2:04 CONSTRUCTION OF RETAINING BERMS:

(a) Earthen berms will be required to be constructed in sequence with the placement and compaction of the landfill in order to prevent ponding of surface water in areas not yet filled. Berm construction shall be started during initial stages of the landfill operation, but in no case shall refuse or ash residue be placed in the vicinity of berms until the berm has been thoroughly compacted in accordance with the specifications herein and approved by the District of Columbia.

(b) Soil existing in the area shall be utilized where available, provided it is suitable material. Material used for construction of the berms shall be inorganic soil, free of putrescible material, refuse, trash, vegetation, stumps, logs, frozen material, concrete slabs, large rocks or other objects or any demolition wastes. The material shall contain sufficient silt and clay size particles to render it impervious to rapid seepage. (At least 35% of the portion of the material passing a No. 4 standard sieve shall pass a No. 200 standard sieve.) If suitable material is not on the site, the Contractor shall notify the District of Columbia ten (10) days prior to the date on which the material is needed and the District will provide suitable material at the site.

(c) The berms shall be constructed in layers of material which shall not exceed one foot in loose depth. Each layer shall be rolled by at least four coverages over its entire surface of either the "Sanitary Landfill Compactor" herein specified or an approved earthwork compaction roller properly loaded to effect compaction of the entire layer being rolled.

(d) At the time of compaction by the roller, the material shall be dry enough (have a moisture content low enough) so that it will not flow laterally or be squeezed out from under the roller wheels but will pack down in place under the action of the rollers.

(e) The outer slope of the berm shall be graded to a smooth and even surface approximately straight and even and conforming to the slope indicated on the drawings.

(f) Refuse fill extending higher than the inner edge of the berm shall be sloped back at a maximum slope of 4:1 and shall be placed, compacted and covered in such a manner that the top of the berm will remain exposed and available for use as a roadway for inspecting vehicles.

2:05 PLACEMENT OF REFUSE:

(a) The Contractor shall construct the Kenilworth Sanitary Landfill by placement of solid waste refuse in accordance with the drawings and as specified herein.

(b) The Contractor shall commence sanitary landfilling operations in Disposal Area I by placement of refuse in sequence Area I. Refuse will be delivered to this area by the collection vehicles utilizing the on-site access road system. Refuse will be spread and compacted by use of sanitary landfill compactors provided by the Contractor. The compactors shall construct a ramp of refuse at approximately a 4:1 slope and push it up this ramp. This refuse shall be placed in layers 8 to 10 inches in depth and compacted by continuous and repeated coverages of the compactor vehicles. Refuse shall be placed in Disposal Area I, sequence Area 1, until the initial lift contours are obtained as shown on the drawings.

(c) Refuse will then be placed in sequence Areas 2 and 3 in numerical order, in like manner, until Areas 1, 2 and 3 are completed to the initial grade contours shown on the enclosed drawings.

(d) Once the initial grading plan is completed, as specified above, additional refuse will be placed in the same numerical sequence until Areas 1, 2 and 3 are completed to the final grade contours shown on the drawings. These grading contours indicate the proposed refuse elevation including three (3) feet of final cover.

(e) Upon completion of Areas 1, 2 and 3 to the final grade contours, the Contractor will begin placing refuse in Area 4 and complete it to the initial lift contours shown on the attached drawings. Areas 5, 6, and 7 will then be developed in a similar manner. Once these areas are constructed to the initial lift contours, additional refuse and cover will be placed until the final grade contours are reached completing each area in numerical sequence.

(f) Refuse Disposal Areas I and II will be developed utilizing the method of operations described in items (a) through (e); each sub-area being constructed to initial lift contours, and then to final grade contours in the following groups:

(1) Refuse Disposal Area I

1, 2, 3	(Initial and Final Lifts)
4, 5, 6, 7	(Initial and Final Lifts)
8, 9	(Initial and Final Lifts)

(2) Refuse Disposal Area II

10, 11 (Initial and Final Lifts)
12, 13 (Initial and Final Lifts)
14, 15 (Initial and Final Lifts)
16, 17 (Initial and Final Lifts)

(g) Any deviation from the preceding method of operation by the Contractor must be approved by the District of Columbia prior to commencement of operations by the Contractor.

2:06 PLACEMENT OF ASH RESIDUE:

(a) Incinerator ash residue will be delivered to the Kenilworth Sanitary Landfill site by the District of Columbia at an average rate of 600 cubic yards per day, six days per week. This ash residue will vary in temperature.

(b) The Contractor shall direct ash delivery vehicles to discharge ash residue in those areas designated as Ash Residue Areas.

(c) Ash Residue Areas shall be used in alphabetical sequence, as noted on the drawings. However, Ash Residue Area E shall be utilized and completed as soon as possible. Initial preparation of ash residue area E shall consist of excavating existing cover material in such a manner as to provide adequate drainage. The excavated material shall be used to construct a site berm as shown on the drawing and stockpiled for future use.

(d) Since much of this ash residue will be received in a smoldering condition, quenching of ash residue by use of the water tank truck, or more frequent use of cover material will be necessary.

(e) The Contractor shall quench, spread, compact and cover the incinerator ash residue, as required to control smoke and odor, and/or as approved by the District of Columbia. A minimum of six (6) inches of "daily cover" will be required.

2:07 PLACEMENT OF COVER MATERIAL:

(a) Daily cover of refuse is necessary to prevent fly and rodent attraction, and to control windblown debris, odors, to reduce the possibility of fire and to improve the general appearance of the fill. Cover material shall be placed as the fill progresses and a minimum of at least once a day near the end of the daily refuse delivery period. The Contractor shall place and compact cover material over the compacted fill in accordance with these specifications.

(b) The Contractor shall place and compact a minimum of 6 to 8 inches of compacted cover material on all exposed refuse at the end of each working day. This 6-to 8-inch "Daily" cover is considered sufficient on all working faces and side slopes which will be covered with additional refuse within several days.

(c) In the event that an area covered with this "Daily" cover will not be used within a maximum of five (5) days, additional cover material will be placed by the Contractor to provide a minimum "Intermediate" cover depth of twelve (12) inches compacted in place.

(d) The Contractor shall provide a "Final" cover of not less than 36 inches of cover material compacted and graded on the final lift of compacted refuse and on incinerator ash residue except in roadway and parking lots where section on drawing will take precedent.

2:08 BULKY WASTES:

(a) During the operation of Kenilworth Sanitary Landfill, bulky wastes consisting of furniture, tree stumps, demolition wastes, refrigerators, etc., will be delivered to the site. This type of material will be conditioned prior to incorporation into the sanitary landfill.

(b) The Contractor shall compact and flatten bulky waste material prior to incorporating it into the general fill.

(c) Building demolition wastes will be placed in the ash disposal areas at the direction of the District of Columbia, depending on the exact type of material involved. Such material when received as a homogeneous load may be diverted directly to the ash disposal area being used upon approval by the District representative. Unless so directed, the material will be delivered to the fill area.

(d) Building demolition wastes will not be used as cover material.

2:09 CONSTRUCTION AND MAINTENANCE OF DRAINAGE FACILITIES:

(a) The Contractor shall construct and install the necessary roadside ditches, culverts, outfall ditches, and swales, as shown on the drawings, and as approved by the District of Columbia.

(b) Certain drainage facilities and stream relocations will be installed or constructed by the District of Columbia, as shown on the drawings and noted in the specifications.

(c) Maintenance of all drainage channels, ditches, culverts, and swales, constructed by the Contractor, existing, or installed by the District will be performed by the Contractor.

2:10 ON-SITE MANAGEMENT:

(a) The Contractor shall provide sufficient on-site personnel to insure efficient operation and management of the Kenilworth Sanitary Landfill. Additional personnel must be available to provide the necessary manpower continuously during periods of sickness and vacation, for equipment operation and maintenance, security, clerical work, supervision, and other incidental job needs.

(b) In addition, the District of Columbia will provide a full-time representative who will represent the District in all matters pertaining to the operation, maintenance, and management of the Kenilworth Sanitary Landfill.

(c) The District of Columbia will also provide an Inspector whose duties will be to assist the District Representative and inspect all aspects of the landfill operation.

(d) It shall be a subsidiary obligation of the Contractor to provide sufficient office space for a minimum of two (2) District employees assigned to the Kenilworth Sanitary Landfill.

(e) Management personnel furnished by the Contractor shall be responsible for incorporating the following items or practices into the operation of the Kenilworth Sanitary Landfill, as approved by the District of Columbia, and specified herein:

(1) Access: Roads to be regraded, constructed and maintained, as previously specified. Access to the site to be limited by the installation of fencing and gates.

(2) Equipment Shelter: Provide Maintenance building, as specified under Section 1:06 of these specifications.

(3) Employee Facilities: Provide as shown on the drawings and specified under Section 1:06 of these specifications.

(4) Weighing Facilities: Furnish, install and operate in accordance with these specifications:

(5) Communications: The Contractor shall provide on-site communications by use of inter-connected telephones within the buildings and portable radio (citizens' band) between the office and the face of the fill. The Contractor shall be responsible for relocating the existing telephone at the Kenilworth Landfill site to the District office space provided. Although this relocation cost is to be a subsidiary obligation of the Contractor, the operating cost for this one telephone will be paid by the District.

(6) Fire Protection: The Contractor shall provide adequate fire protection by use of a water tank truck. This water tank truck shall have a minimum water storage capacity of 2000 gallons and contain a pressure pump and sufficient hose to fight a fire anywhere on the fill. Small UL approved fire extinguishers shall be available in all landfill equipment and buildings. Cover material shall also be used for fire control, when required.

(7) Limited Access: Access to the landfill site will be controlled by use of chainlink fencing and gates. A guard or watchman shall be posted after normal operating hours to deny access to all unauthorized personnel. Access will be provided for the District Vehicles to transport incinerator ash residue to the designated Ash Disposal Areas after normal operating hours.

(8) Unloading of Refuse: The Contractor shall unload refuse under the direction of an attendant (spotter) and shall be confined to the working face of the fill.

(9) Blowing Debris: The Contractor shall install temporary fencing around the immediate working area of the fill to confine blowing paper and debris. This fencing shall be easily transportable and shall be a minimum of 6 feet high. The Contractor shall submit to the District, a sketch or drawing, showing the type of fence and proposed method of installation for approval prior to use. The Contractor shall police the fenced-in area and surrounding areas daily, removing all collected and scattered debris and incorporate this material into the fill.

(10) Spreading and Compacting Refuse: The Contractor shall spread and compact refuse using the equipment and procedures previously specified under section 2:05 of these specifications and as approved by the District of Columbia.

(11) Depths of Lifts: Individual refuse lifts shall be constructed to the grades shown on the drawings and as specified under section 2:05 of these specifications.

(12) Cover: The Contractor shall obtain cover material in the manner specified under section 2:03 and shall cover the refuse as specified under section 2;07 of these specifications. Cover designation and depths are listed below:

Daily Cover - 6 inches compacted in place.

Intermediate cover - 12 inches compacted in place.

Final cover - 36 inches compacted in place.

(13) Large items: The Contractor shall receive, condition, and incorporate large or bulky waste material in accordance with section 2:08 of these specifications.

(14) Burning: No Burning of any description will be permitted at Kenilworth Sanitary Landfill.

(15) Salvage: No salvaging, scavengering, or animal feeding will be permitted on the site during operation of the Kenilworth Sanitary Landfill.

(16) Vector Control: The Contractor shall conduct the operation of the sanitary landfill in such a manner so as to insure unfavorable conditions for production of rodents and insects. Strict adherence to these specifications and operating procedure will reduce the problem to a minimum. Special attention must be given to proper maintenance of daily, intermediate and final cover as well as proper drainage. In the event that rodent and insect activity becomes apparent, supplemental vector control measures will be initiated by the Contractor with the approval of the District of Columbia.

(17) Dust Control: The Contractor shall control the problem of dust on the access roads or on the fill by use of sodium chloride, road oil, and the water tank truck whenever excessive dust occurs. Supplemental dust control measures will be performed by the Contractor with the approval of the District of Columbia.

(18) Drainage: The Contractor shall provide adequate surface drainage on the entire sanitary landfill site as shown on the drawings and specified under section 2:09 of these specifications. Periodic inspections will be made by the Contractor and the District to locate any standing water on the site and immediate action will be taken by the Contractor to drain and eliminate any low lying areas.

(19) Supervision of Operation: The Contractor shall provide a qualified individual employee full time as a landfill Supervisor, as noted under item 2:10 of these specifications, to direct the operation of this sanitary landfill. The District of Columbia will review the qualifications of the personnel to be assigned by the Contractor and approval must be obtained prior to commencement of landfill operations.

(20) Accident Prevention and Safety: The Contractor shall insure that all of his employees, utilized at the Kenilworth Sanitary Landfill, are schooled in the principles of first aid and safety and that adequate first aid equipment is maintained on the site, easily accessible and ready for use.

(21) Operational Records: The Contractor shall provide the District of Columbia, refuse quantities, incinerator residue quantities on a monthly basis and/or as directed by the District of Columbia. Additional records showing the quantity and type refuse placed, and its location in the fill, will be submitted by the Contractor to the District, as directed. One copy of the landfill drawing shall be marked weekly showing progress of the filling operation. The Contractor shall also maintain accurate records of all labor costs subdivided by categories of employees, costs of utilities, maintenance of both required equipment and such other equipment that he chooses to employ, and all miscellaneous expenses. A copy of these records shall be delivered to the District of Columbia on a monthly basis.

(22) Inspection and Evaluation: Inspection and evaluation of the Kenilworth Sanitary Landfill may be conducted by the District of Columbia at any time. Access to the site shall be made available to authorized representatives of the District of Columbia and the National Parks Service and the U. S. Department of Health, Education and Welfare without prior notification by these agencies. The Contractor is hereby notified that it is the intent of these specifications to establish a model sanitary landfill operation at the Kenilworth site and to conduct his operations in an efficient, orderly and exemplary manner.

(23) The Contractor shall allow visitors to inspect the operation at any reasonable time during the working day when accompanied by an authorized representative of the District of Columbia, Department of Health, Education and Welfare or the National Parks Service.

SECTION 3

COMPLETION

3:01 GENERAL:

(a) The Contractor shall complete the construction and development of the Kenilworth Sanitary Landfill, as shown on the drawings, enclosed as a part of these specifications and as specified herein.

3:02 REGRADING FINAL COVER:

(a) Upon completion of refuse and cover placement in accordance with Section 2:05 of these specifications, the Contractor shall regrade the final cover over each group of sequence areas as they are completed. Additional cover material shall be placed and compacted and graded to fill any low areas that have developed as a result of settlement or non-uniform compaction. This regrading of final cover shall be to the lines, grades and contours as shown on the final grading plan. Special care shall be taken by the Contractor to insure that a minimum of 36 inches of final cover is installed. Test borings will be taken by the Contractor at no additional cost to the District, as directed by the District of Columbia to insure satisfactory compliance with this requirement. Regrading will be performed by the Contractor as required over completed areas to re-establish plan contours prior to seeding.

3:03 USE OF DRIED SLUDGE:

(a) Air-dried sludge from the District's Water Pollution Control Plant will be delivered by the District of Columbia to the Kenilworth Sanitary Landfill as requested by the Contractor and directed by the District. The dried sludge delivered will be used in the top dressing of the final cover only after regrading, as specified under Section 3:02, is completed. The Contractor shall establish small test areas to determine the best mixture of dried sludge and cover material to be utilized as directed by the District. Upon approval by the District of the best sludge-cover mixture, the Contractor shall incorporate this mixture into the final cover by use of a disc-harrow. All sludge areas shall be properly limed to produce a pH factor of 6.8 which is conducive to the establishment of a good turf cover. 500 pounds of 0-20-0 fertilizer per acre shall be applied to all areas and worked into the top four (4) inches of soil by discing or other approved methods. The entire area shall be regraded to eliminate the possibility of ponding water, and the Contractor shall apply 800 pounds per acre of 10-6-4 fertilizer, of which not less than twenty-five (25) per cent of the total nitrogen shall be water insoluble.

3:04 SEEDING:

Upon completion of regrading and preparation of the final cover material, the Contractor shall seed the completed areas as specified herein.

(a) All seed used shall be labeled in accordance with the U. S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on October 31, 1967. All seed shall be furnished in sealed standard containers unless exception is granted in writing by the District. Seed which has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable. The percentage by weight in each lot of seed shall be as follows:

Kind of Seed	Percentage by Weight
Kentucky Bluegrass (Poaprantinis)	20%
K-31 Red Fescue (Festuca rubra)	80%

(b) All seeding shall be done from March 15 to May 30, from August 15 to November 15 or as approved by the District. The Contractor shall employ a method of sowing satisfactory to the District, making use of approved mechanical power-drawn drills or seeders, mechanical hand seeders, or other approved methods. When drills are used, provisions shall be made by markers or other means to insure that successive seeded strips will overlap or be separated by a space not greater than the space between rows planted by the equipment being used. If inspection, during planting operations or after there is a show of green, indicates that strips wider than the space between the planted rows have been left or skipped, the District will require the planting of additional seed in those areas. When conditions are such, by reason of drought, high winds, excessive moisture or other factors, that satisfactory results are not likely to be obtained, the Contractor will stop work at the direction of the District, and it shall be resumed only when approval is obtained from the District to do so.

(c) Seed shall be broadcast by approved sowing equipment in even distribution at the rate of 120 pounds per acre.

(d) After the seeding has been completed, and prior to compaction, the surface shall be cleared of all stones larger than 2 inches in diameter and of all roots, brush, trash or other objects that may interfere with maintenance operations. Immediately after seeding is completed, the entire area shall be compacted by a roller or other approved equipment to reduce air pockets to a minimum and watered with a fine spray.

(e) An approved mulch shall be applied by the Contractor and shall be secured by means of an asphalt emulsion or other means approved by the District prior to application.

(f) The Contractor shall establish a good healthy stand of grass over the completed areas of the Kenilworth Sanitary Landfill. Upon establishment of a stand of grass, accepted by the National Parks Service, the Contractor shall water, cut, and otherwise maintain it in accordance with standard landscaping practices and as directed by the District for a period of thirty (30) days. At this time, the National Parks Service will reinspect the grass production and accept that portion which is satisfactory.

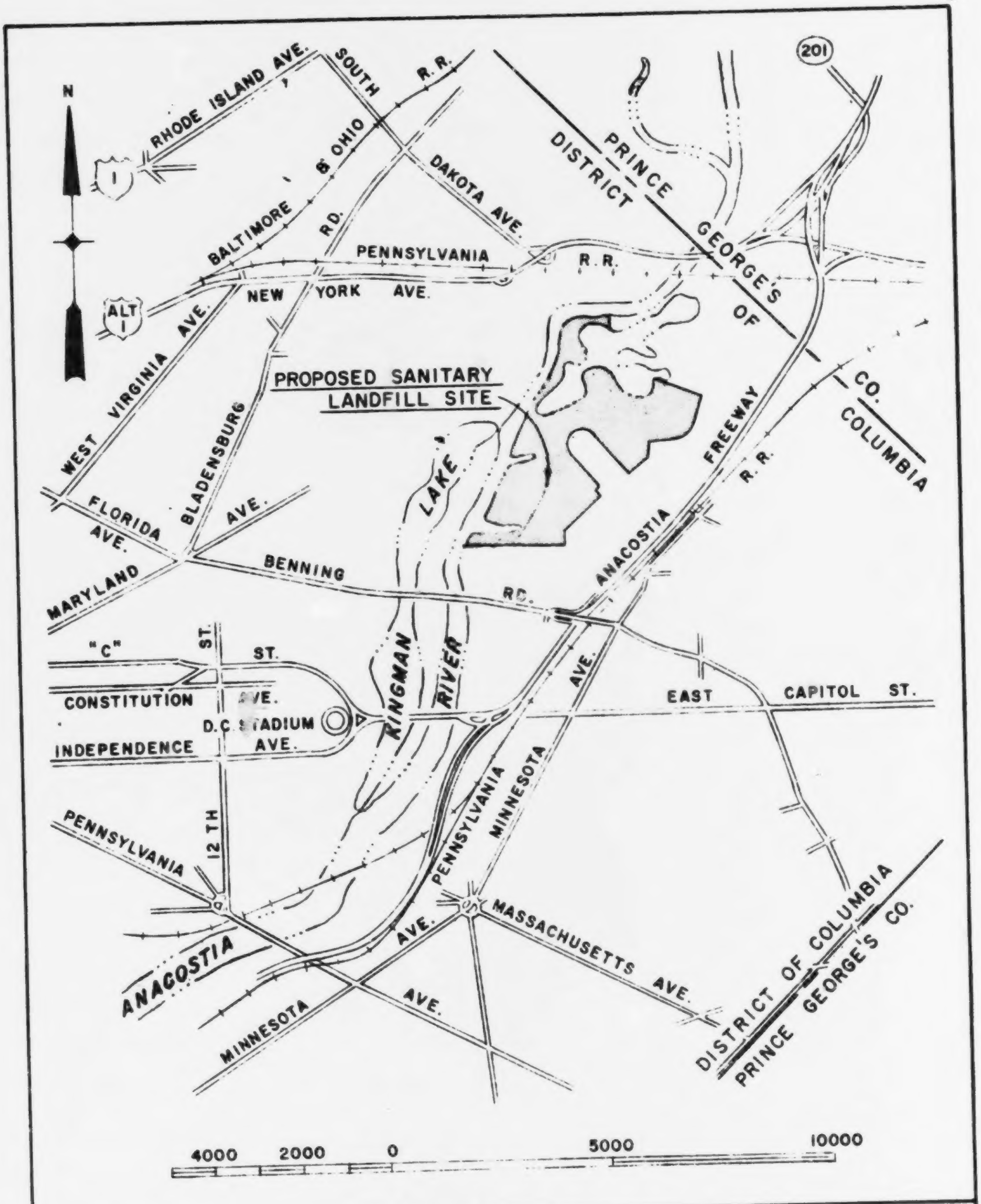
(g) When the surface of any part of an area which has been seeded is gullied or otherwise damaged during this 30-day maintenance period, the affected portions shall be repaired to re-establish the condition and grade of soil prior to the injury and shall then be replanted as hereinbefore specified.

3:05 SEQUENCE OF COMPLETION:

(a) The Contractor shall conduct the sanitary landfill operation following the sequence shown on the drawings and as specified hereinbefore under Section 2:05. Use of this sequence is necessary to allow completion and preparation for ultimate development of the groups of sequence areas in the order specified.

(b) The Contractor shall keep a copy of the operating plan, enclosed as a part of these specifications, marked to indicate the location and type of refuse incorporated in the fill. A copy of the plan so marked shall be submitted monthly to the District of Columbia.

(c) Use of the sequence of operations and areas hereinbefore specified will permit maximum use of the operating facilities furnished and installed by the Contractor. The Contractor shall remove these facilities, as the development of the Kenilworth Sanitary Landfill nears completion, as directed by the District of Columbia.

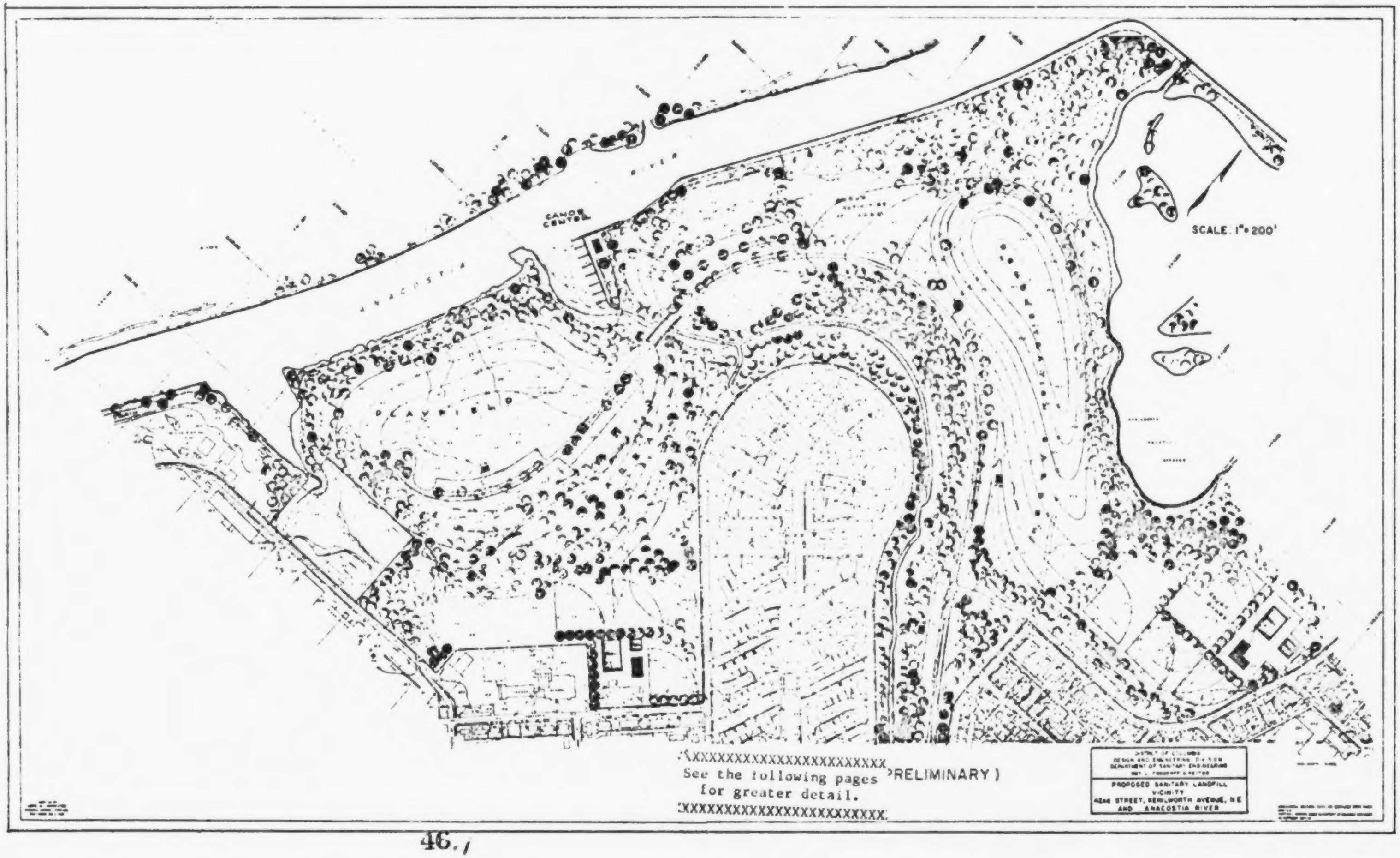

N
RHODE ISLAND AVE.
1
SOUTH
R. R.
BALTIMORE & OHIO
DAKOTA AVE.
PRINCE
DISTRICT
201
GEORGE'S
OF
CO.
COLUMBIA
RD.
PENNSYLVANIA
R. R.
ALT 1
NEW YORK AVE.
WEST VIRGINIA AVE.
BLADENSBURG
PROPOSED SANITARY LANDFILL SITE
LAKE
FREEWAY
R. R.
FLORIDA AVE.
AVE.
MARYLAND
BENNING RD.
ANACOSTIA
"C" ST.
ST.
CONSTITUTION AVE.
D.C. STADIUM
INDEPENDENCE AVE.
KINGMAN
RIVER
AVE.
EAST CAPITOL ST.
PENNSYLVANIA
12 TH
PENNSYLVANIA
MINNESOTA
ANACOSTIA
AVE.
MASSACHUSETTS AVE.
MINNESOTA AVE.
DISTRICT OF COLUMBIA
PRINCE GEORGE'S CO.
4000
2000
0
5000
10000

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL STREET
BALTIMORE, MARYLAND

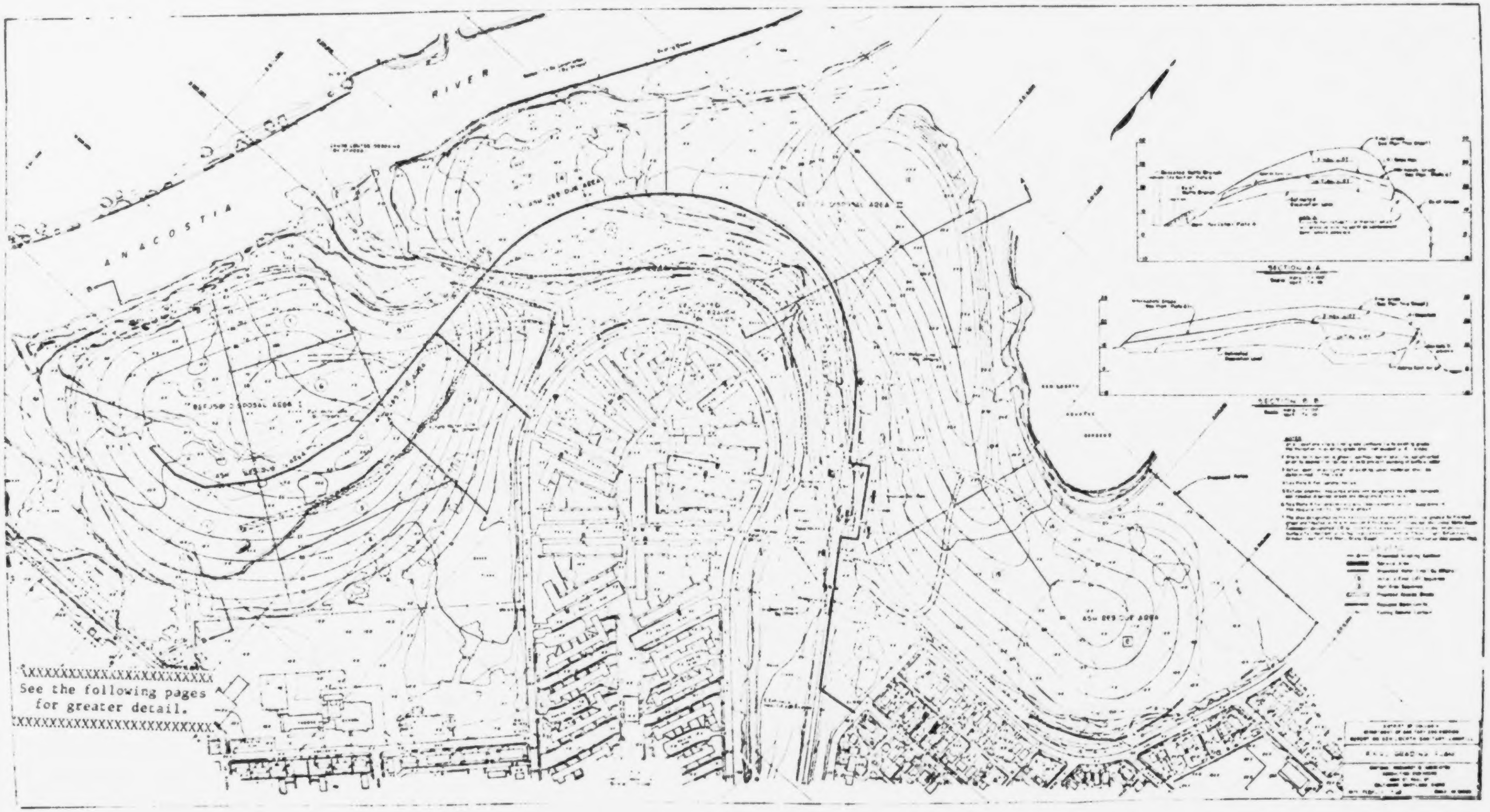
DISTRICT OF COLUMBIA
DEPARTMENT OF SANITARY ENGINEERING
KENILWORTH SANITARY LANDFILL
VICINITY MAP
DATE: FEBRUARY, 1968 SCALE: AS SHOWN

45

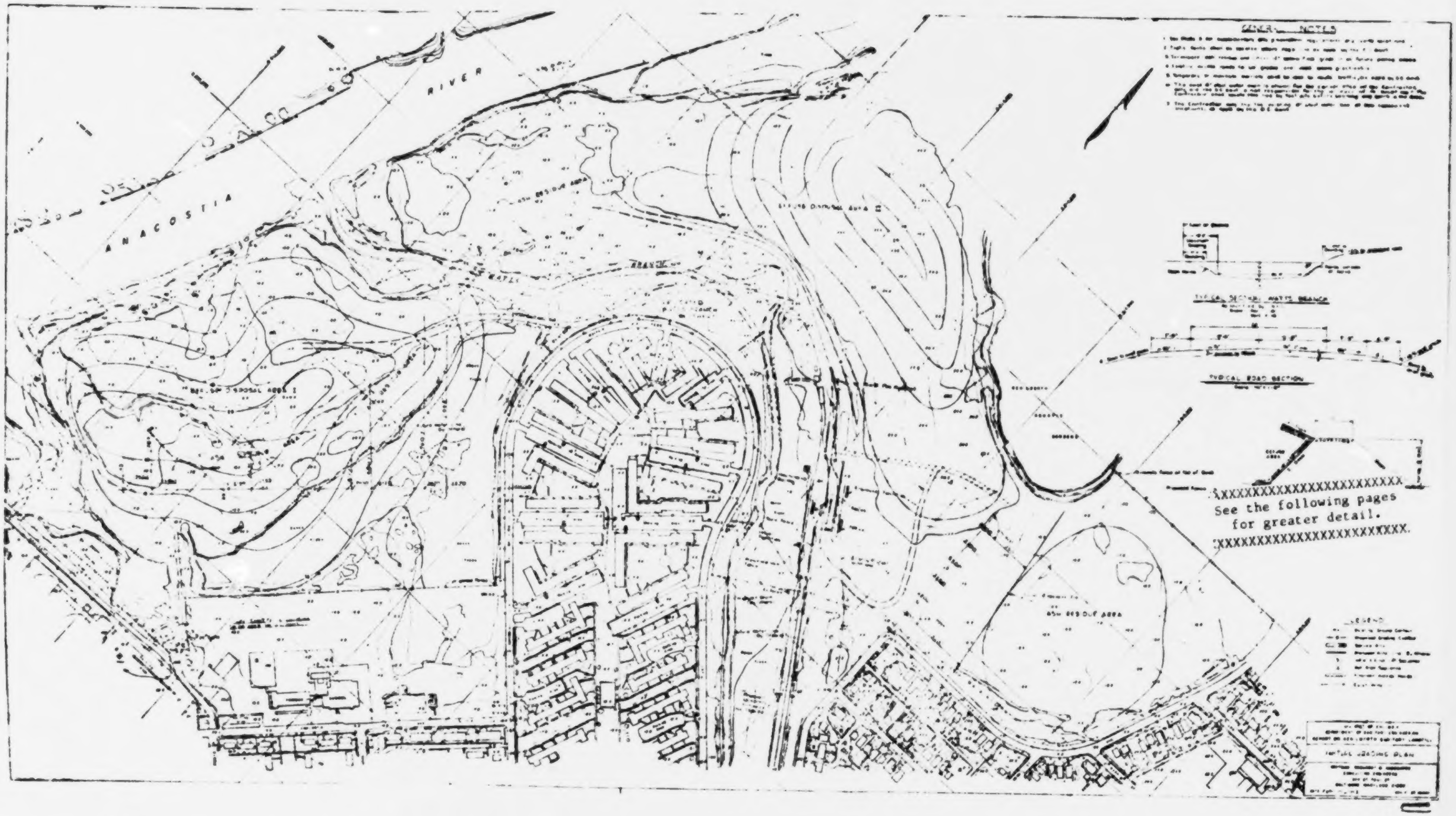
PLATE 1


ANACOSTIA RIVER
CANOE CENTER
PLAYFIELD
SCALE: 1"=200'
(PRELIMINARY)
DISTRICT OF COLUMBIA
DESIGN AND ENGINEERING DIVISION
DEPARTMENT OF SANITARY ENGINEERING
PROPOSED SANITARY LANDFILL
VICINITY
42nd STREET, KENILWORTH AVENUE, N.E.
AND ANACOSTIA RIVER

XXXXXXXXXXXXXXXXXXXXXXXXXX
See the following pages
for greater detail.
XXXXXXXXXXXXXXXXXXXXXXXXXX


ANACOSTIA
RIVER
ASH RESIDUE AREA
SECTION A-A
SECTION B-B

See the following pages
for greater detail.


ANACOSTIA
RIVER
GENERAL NOTES
TYPICAL SECTION WATTS BRANCH
TYPICAL ROAD SECTION
LEGEND
INITIAL GRADING PLAN

XXXXXXXXXXXXXXXXXXXXXXXXX
See the following pages
for greater detail.
XXXXXXXXXXXXXXXXXXXXXXXXX.

MAPS, Incorporated
Dundalk Marine Terminal
BALTIMORE 22, MD.

CONTROL DATA

ORIGIN PROJECT No. 67-70
STATE: Maryland
ORDER OF SURVEY: Second
ZONE
PROJECTION Lambert

CITY, TOWN OR COUNTY	NAME OF STATION	YEAR
District of Columbia	A-3	1967

X = 813,830.14	DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS OBSERVED AT STATION		
Y = 389,790.07	OBJECT	DISTANCE—FT.	GRID ~~AZIMUTH~~ bearing
VERT. DATUM	A-2	536.53	S46-53-39E
ELEVATION (FEET)			
ESTABLISHED BY Maps, Incorporated			

SKETCH AND DETAILED DESCRIPTION AT STATION:

Station A-3 is a 3/4" iron bar set flush with the ground in back of the Macadam Curb on the south side of Hayes Street, N.E. approximately 530' north of the intersection with Anacostia Avenue.

CHIEF OF PARTY: M. M. Lewis DATE ESTABLISHED: ~~RECOVERED~~ September 1, 1967 CONDITION:

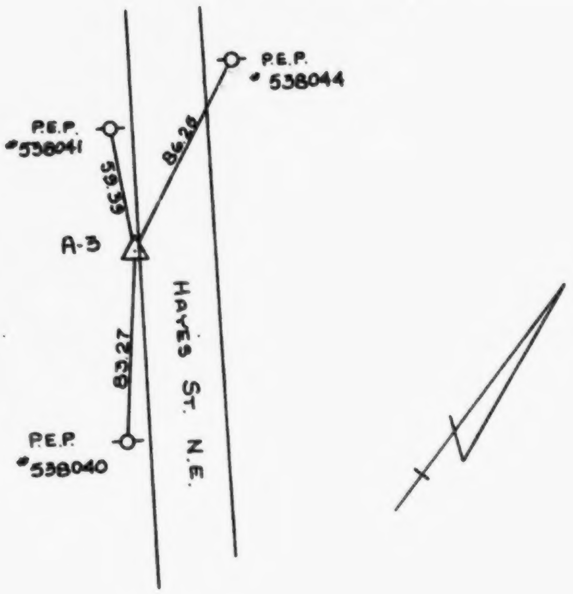


PLATE 5

MAPS, Incorporated
Du[illegible] Marine Terminal
BALTIMORE 22, MD.

CONTROL DATA

ORIGIN PROJECT No. 67-70
STATE: Maryland
ORDER OF SURVEY: Second
ZONE
PROJECTION Lambert

CITY, TOWN OR COUNTY	NAME OF STATION	YEAR
District of Columbia	A-2	1967

X = 814,219.93
Y = 389,421.39
VERT. DATUM
ELEVATION (FEET)
ESTABLISHED BY Maps, Incorporated

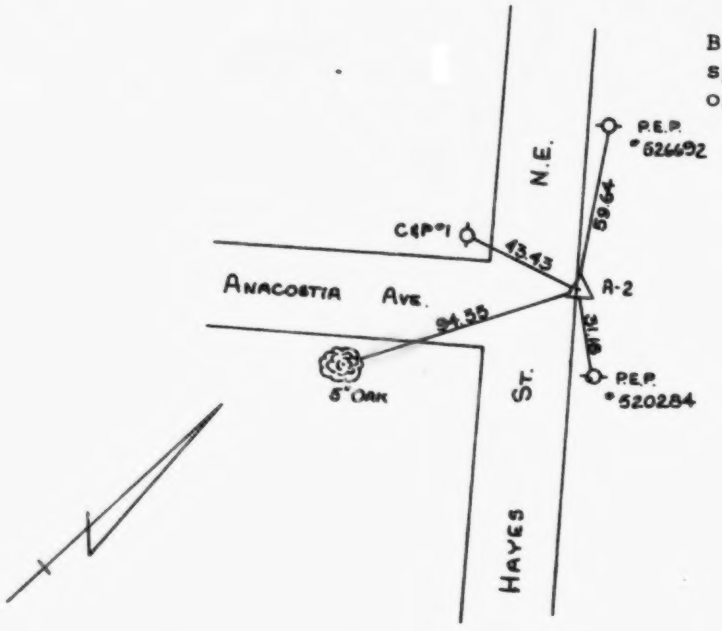
DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS OBSERVED AT STATION

OBJECT	DISTANCE—FT.	GRID ~~AZIMUTH~~ Bearing
A-3	536.53	N46-53-39W

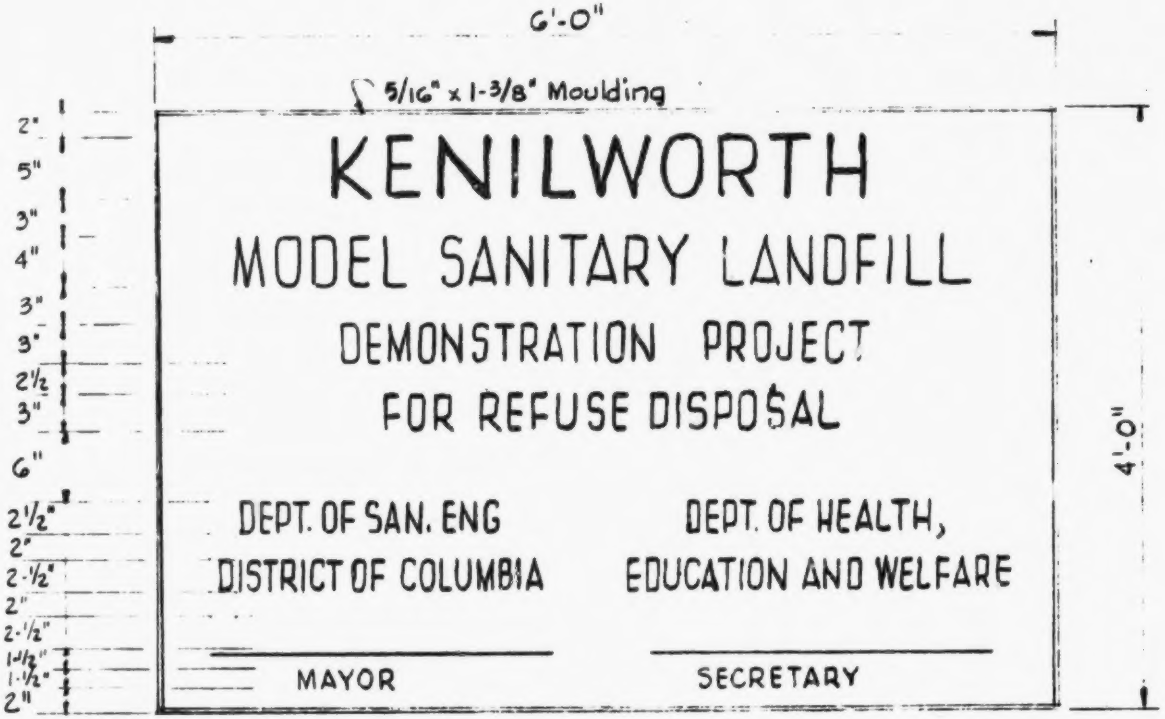
SKETCH AND DETAILED DESCRIPTION AT STATION:

Station A-2 is a 3/4" iron bar set flush with the ground in back of the concrete curb on the north side of Hayes Street, N.E. at the intersection with Anacostia Avenue.

CHIEF OF PARTY: M. M. Lewis DATE ~~RECOVERED~~ ESTABLISHED: Sept. 1, 1967 CONDITION:

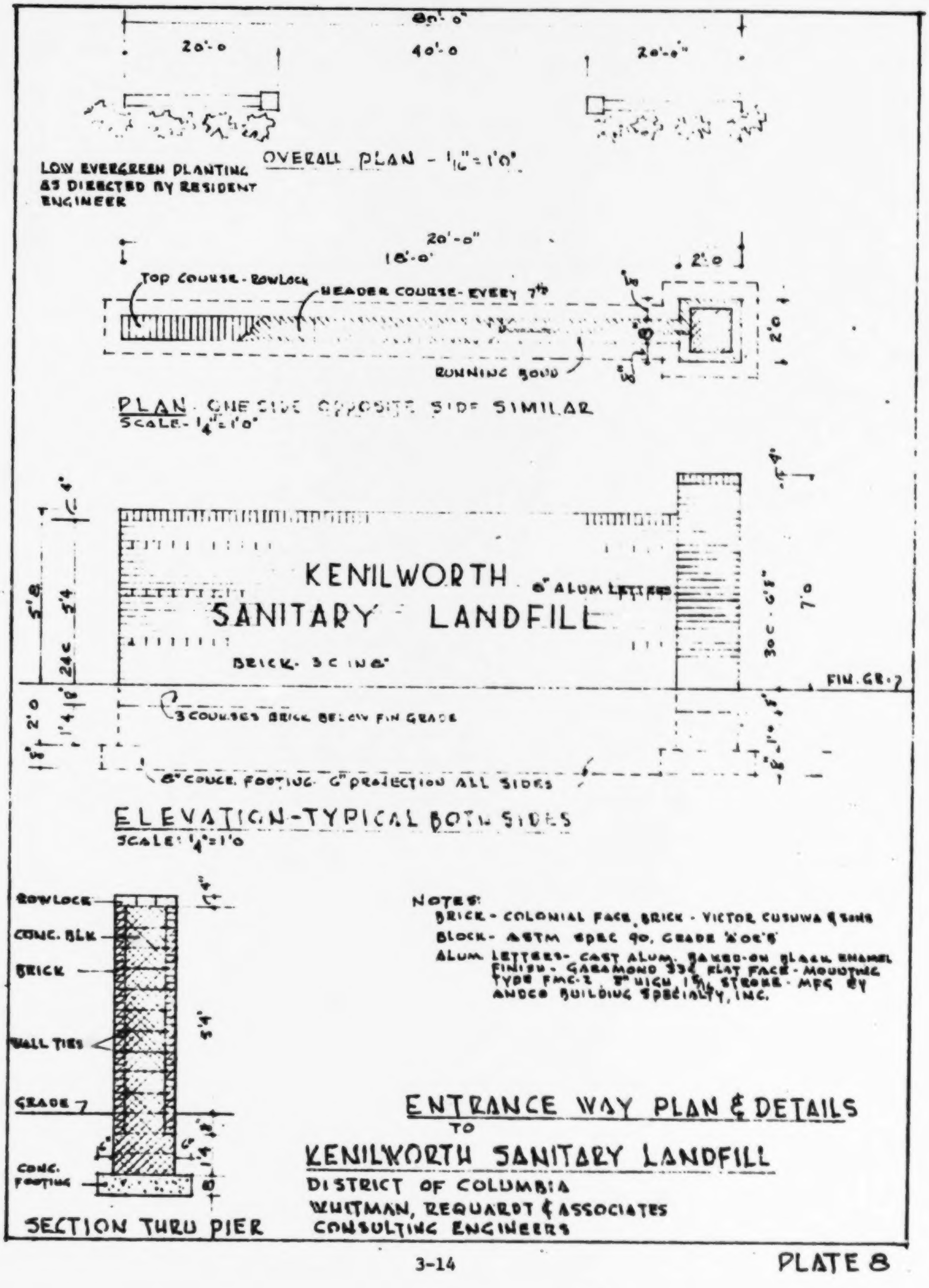


B.M. T-1 is a R.R. spike approx. 1' off the ground in P.E.P. Pole #526692 shown in this drawing.
EL-18.55
D.C. Engr. Datum


6'-0"
5/16" x 1-3/8" Moulding
KENILWORTH
MODEL SANITARY LANDFILL
DEMONSTRATION PROJECT
FOR REFUSE DISPOSAL
DEPT. OF SAN. ENG
DISTRICT OF COLUMBIA
DEPT. OF HEALTH,
EDUCATION AND WELFARE
MAYOR
SECRETARY
4'-0"
2"
5"
3"
4"
3"
3"
2½
3"
6"
2½"
2"
2-½"
2"
2-½"
1-½"
1-½"
2"

SIGN LETTERING

FEBRUARY, 1968
Date


80'-0"
20'-0
40'-0
20'-0"
LOW EVERGREEN PLANTING AS DIRECTED BY RESIDENT ENGINEER
OVERALL PLAN - 1/16"=1'0"
20'-0"
18'-0"
2'-0
TOP COURSE - ROWLOCK
HEADER COURSE - EVERY 7th
RUNNING BOND
2'0
PLAN - ONE SIDE OPPOSITE SIDE SIMILAR
SCALE - 1/4"=1'0"
KENILWORTH
SANITARY LANDFILL
8" ALUM LETTERS
BRICK - 3C IN 8"
5'8
5'4
24C
30C - 6'8"
7'0
FIN. GR.
3 COURSES BRICK BELOW FIN GRADE
8" CONC. FOOTING 6" PROJECTION ALL SIDES
ELEVATION - TYPICAL BOTH SIDES
SCALE: 1/4"=1'0
ROWLOCK
CONC. BLK
BRICK
WALL TIES
GRADE
CONC. FOOTING
5'4"
SECTION THRU PIER

NOTES:

BRICK - COLONIAL FACE BRICK - VICTOR CUSUWA & SONS

BLOCK - ASTM SPEC 90, GRADE "A" OR "B"

ALUM. LETTERS - CAST ALUM. BAKED-ON BLACK ENAMEL FINISH - GARAMOND 336 FLAT FACE - MOUNTING TYPE FMC-2 8" HIGH 1 5/16 STROKE - MFG BY ANDCO BUILDING SPECIALTY, INC.

ENTRANCE WAY PLAN & DETAILS
TO
KENILWORTH SANITARY LANDFILL
DISTRICT OF COLUMBIA
WHITMAN, REQUARDT & ASSOCIATES
CONSULTING ENGINEERS

PLATE 8

GOVERNMENT OF THE DISTRICT OF COLUMBIA

DEPARTMENT OF SANITARY ENGINEERING

BID PROPOSAL AND SPECIFICATIONS FOR

INVITATION NO. C- 6898-S

PROJECT: KENILWORTH SANITARY LANDFILL

LOCATION: Section G, U.S. Reservation 343, in the Vicinity of Watts Branch and the Anacostia River, N.E.

DATE:

For use with

GENERAL PROVISIONS BOOKLET FOR THE DISTRICT OF COLUMBIA GOVERNMENT CONSTRUCTION PROJECT
Dated July, 1964, and Supplements Issued Thereto.

BIDS WILL BE RECEIVED AND PUBLICLY OPENED
BY THE PROCUREMENT OFFICE, D.C.
Room 404, Bid and Contract Division,
499 Pennsylvania Avenue, N.W.
Washington, D.C., 20001

BIDS TO BE OPENED: February 26, 1968 **3:00 P.M.**

BIDDER'S NAME ....

SPECIAL CONDITIONS

1. **SCOPE OF THE WORK:**

The work to be performed under these specifications and other contract documents shall include the operation of a model sanitary landfill project, including initial preparation of the site, construction of the permanent and temporary facilities for personnel employed at the site, construction of the temporary and permanent facilities and devices for weighing refuse and direction of the operation, the operation of refuse and ash disposal by the sanitary landfill method with all appurtenances, lease purchase and maintenance of all equipment and final completion of the site for future use as a public park.

2. **PLAN OF OPERATION AND ENGINEERING DRAWINGS:**

The FINAL PLAN - Design, Procedures and Operating Requirement Specifications, February 1968 (hereinafter referred to as "FINAL PLAN"), for the Kenilworth Sanitary Landfill is hereby made a part of the contract documents and shall be strictly adhered to at all times unless specific authorization is given for departures therefrom by the Department of Sanitary Engineering of the District of Columbia. The "FINAL PLAN" includes both the sequence of operations and drawings showing the existing features of the site, initial and final grading plans and survey control points of references.

3. **AWARD OF THE CONTRACT:**

The contract will be awarded to the lowest responsible bidder for operation of Kenilworth Sanitary Landfill, including relocation of the project to the Oxon Bay site with subsequent operation of that facility, either prior to or at the end of the basic contract period.

The total bid price shall include all material and labor costs of all permanent and temporary facilities, sanitary landfill operation, and improvements required by the specifications or other contract documents. It shall include all initial site preparation and final site completion. The total bid price shall also include the liquidating lease purchase of the equipment specified and the cost of maintenance.

"Responsible bidder" shall be defined as a bidder who submits a balanced bid in conformance with the requirements of the specifications and other contract documents and who proves to the satisfaction of the Department of Sanitary Engineering of the District of Columbia that he or his corporation meets the requirements of Section entitled "Qualification of Bidders".

The successful bidder will be officially notified by the District of Columbia of the acceptance of his proposal and the "Schedule of Prices". The successful bidder shall execute the contract and bond within seven (7) calendar days after such notification.

4. NOTICE TO PROCEED:

The District of Columbia will give the contractor a written notice to proceed with construction no later than five (5) days after execution of the contract. The contractor shall commence the initial clean-up portion of the contract within ten (10) days after receipt of notice to proceed. Times specified in this or other sections of the specifications or other contract documents are stated in calendar days unless specifically delineated to the contrary.

5. TIME OF THE CONTRACT:

Time is of the essence to this contract. The contractor shall prosecute the work in an orderly and efficient manner within the times specified herein.

The initial site preparation, as specified in the "FINAL PLAN", shall be prosecuted to successful completion within thirty (30) days after receipt of notice to proceed. Operation of the sanitary landfill shall commence thirty (30) days after receipt of notice to proceed and upon approval by the Government of the District of Columbia of the initial clean-up and shall continue for an additional five hundred and forty (540) consecutive days thereafter. The aforesaid five hundred and forty (540) calendar days shall be the base period of the operation of the sanitary landfill. Upon termination of the sanitary landfill operations, an additional period of ninety (90) days will be allowed the contractor for final site completion in accordance with the requirements of the "FINAL PLAN".

The District of Columbia shall have the option to continue the sanitary landfill operation at the Kenilworth site or at the Oxon Bay site for a time not to exceed one hundred and eighty days (180) in excess of the base period of the aforementioned five hundred and forty (540) day

The prices bid for operation of the sanitary landfill shall include the cost to the contractor for extension of the operation, as hereinafter set forth in paragraph entitled "Purchase or Lease-Purchase of Required Equipment" in Section entitled "EQUIPMENT."

6. QUALIFICATIONS OF BIDDERS:

The Bidder shall demonstrate experience in sanitary landfilling and shall furnish with his bid satisfactory written evidence stating where, during what period of time and for whom he has operated or is presently operating, a sanitary landfill of the type described in the American Society of Civil Engineers, Manual No. 39, Sanitary Landfill, 1959 Edition, and Suggested Standards for Sanitary Landfill Operation by Ralph J. Black published in the 1961 American Public Works Association yearbook. The aforesaid operation shall have been operated for a sufficient period of time to have experienced a complete cycle of seasonal variations in climate and municipal solid wastes characteristics and shall have been of a sufficient size and complexity to insure experience requisite for this project, but in no case less than an average of approximately 300 tons per day of refuse placed, compacted, and covered. Sanitary landfill operations which have been or are now being operated by the bidder will be subject to inspection to determine whether the operations were or are being performed satisfactorily in the judgement of the Contracting Officer for this contract.

No contract will be awarded to any bidder who, as determined by the Contracting Officer is not qualified to perform satisfactorily the model sanitary landfill operation set forth herein due to an unsatisfactory record on previous operations, inadequate experience, or lack of necessary capital, organization, and/or equipment to conduct and complete the operation in strict accordance with the terms and conditions of this contract.

7. LIQUIDATED DAMAGES:

(a) The time of completion of the initial site preparation phase of this contract is of the essence of the work. The District of Columbia will confine its present operation at the site to the area North of Watts Branch for disposal of the refuse and ash residue during this phase of construction.

The initial site preparation shall be completed within 30 days after receipt of written notification to proceed except that the clean-up and pregrading of the area North of Watts Branch may be accomplished within the first 60 day period after beginning the Sanitary Landfill operation.

For each calendar day delay, beyond the 30 day initial preparation period, in starting the Sanitary Landfill operation the contractor will be assessed four hundred dollars ($400) as liquidated damages. In addition, for each calendar day in excess of the next successive 60 days that the contractor is in default of completing the remaining initial site preparation he will also be assessed seventy five dollars ($75) as liquidated damages.

(b) The Kenilworth Sanitary Landfill site will be operated under Grant by the Federal Government as a model sanitary landfill project and the site will be completed with the anticipation of utilization for public park facilities. It is mandatory that the contractor strictly adheres to the operating procedures and requirements set forth in the "FINAL PLAN". If such procedures and practices are not strictly followed to the satisfaction of the District of Columbia, the District of Columbia shall have the power and authority to assume full control of the operation of equipment, processes, structures and improvements, and appurtenances thereto as may be necessary in order to correct the deficiences. Said costs shall be determined by multiplying the actual cost by 225% and the District shall be authorized and empowered to deduct said costs from any moneys due or that become due to the Contractor under this contract.

(c) If the Contractor refuses or fails to prosecute the work or any separable part thereof in full accordance with the "FINAL PLAN" and if such failure persists for a period of five (5) consecutive days, or on repeated occasions to the extent that in the judgement of the Contracting Officer the purposes of the project will not be adequately accomplished, the Contracting Officer with the written approval of the Commissioner may, by written notice to the Contractor, terminate his right to proceed with the work. In such event, the District may take over the work and prosecute the same to completion, by contract or otherwise, and the Contractor and his Sureties shall be liable to the District for any excess cost occasioned the District thereby. If the Contractor's right to proceed is so terminated, the District may take possession of and utilize in completing the work such materials, appliances and plant as may be on the site of the work and necessary therefor. In the event the failure to perform is due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the District, fires, floods, epidemics, quarantine restrictions, strikes, and freight embargoes, the District may take possession of the equipment processes, structures, and improvements and appurtenances thereto and prosecute the said work during such period of time as the contractor is unable to perform. In such event the contractor shall not be liable for any excess cost incurred by the District in performing the work.

The conditions contained in this Paragraph 6C, are to be considered as substituting for the requirements set forth in Article 9 of the General Provisions provided that any decision made by the Contracting Officer shall be subject to appeal, within 30 days, by the Contractor to the Contract Appeals Board whose decision shall be final and conclusive to the parties hereto.

(d) Within ninety (90) days after termination of the operation of the sanitary landfill, the contractor shall have fully performed all specified final grading, seeding, mulching, and clean-up to the lines and grades shown on the drawings and in accordance with the specifications and other contract documents. All temporary structures and improvements, mechanical equipment and devices, and debris of all types and description shall have been removed from the site. Should the contractor fail to meet all requirements of Section #3 "Completion" of the FINAL PLAN within the ninety (90) day period, the District of Columbia shall have the power and authority, 5 days after receipt by the contractor of written notice of the contractor's failure to comply with the requirements of the FINAL PLAN, to assume full control of the operation of equipment, processes, structures and improvements, and appurtenances thereto and to carry the project through to completion in accordance with the Final Plan. The contractor shall be liable for all costs directly and indirectly incurred by reason of such default. Said costs shall be determined by multiplying the actual cost by 225% and the District shall be authorized and empowered to deduct said costs from any moneys due or that become due to the contractor under this contract.

8. MATERIALS FURNISHED AND WORK PERFORMED BY THE DISTRICT OF COLUMBIA:

Unless specified to the contrary, the contractor shall furnish all materials, tools, equipment, implements, processes, and labor; shall perform all things required to be performed by the contract documents; and furnish or perform the aforesaid at the contactor's entire cost and expense. Materials, tools equipment, etc., to be furnished by the District and work to be performed by others are specified in the contract documents or shown on the plans therein. Such work may be performed concurrently with the contractor's operation, but shall be performed so as not to interfere with the contractor's operations in conformance with the specifications and other contract documents.

9. INSURANCE:

For the length of time specified, the Contractor shall keep in force an insurance policy protecting each of the below named as hereinafter listed, against all liability imposed upon each by law for damages arising out of any operation, act or omission of the contractor or his subcontractors, or arising out of acts, omissions or supervisory connection with work performed by the contractor or his subcontractors, under or in connection with this Contract, or arising out of pickup or delivery operations or the existence of tools, uninstalled equipment and abandoned or unused materials after completion and acceptance or abandonment, of all work under this Contract.

The policy or policies of insurance shall be written in the name of the insured, as required herein, and shall be in a form satisfactory to the District of Columbia. All insurance shall be taken out with a company or companies authorized by the Superintendent of Insurance of the District of Columbia to do business in the District of Columbia. Policies and all endorsements shall be countersigned by agents or brokers licensed by the District. Following award of Contract and prior to commencing work, the Contractor shall, except as hereinafter specified, deposit the policies required herein in the custody of the Contracting Officer until completion of the project. The cost of all insurance required shall be reflected in the unit bid prices.

The following insurance policies are required for this project and, unless otherwise specified, shall be furnished and kept in force by the contractor at his own cost and expense.

A. United States - Insurance for the United States shall be kept in force during the entire period of work in U. S. Reservation 343, until completion and acceptance of all work in the reservation and the removal of all tools, equipment and materials. Such insurance shall provide limits of not less than $50,000 for all damage arising out of bodily injury, sickness or disease, including death at any time resulting therefrom sustained by one person, a total limit of $100,000 for all damage arising out of bodily injuries, sickness or disease, including death at any one accident, and also providing limits of not less than $10,000 for all damages arising out of injury to or destruction of property in any one accident and subject to that limit per accident, a total (or aggregate) limit of $20,000 for all damages arising out of injury to or destruction of property.

Insurance policy protecting the United States shall contain the following endorsements:

1. Such insurance as is afforded under this policy for coverage of bodily injury liability and for coverage of property damage liability applied to work performed for the District of Columbia by (Name and Address of Contractor) and any subcontractors, and liability arising out of omissions or supervisory acts of the District of Columbia and the named insured, including their officers and employees, in connection with work performed by the contractor or his subcontractors, under or in connection with Contract Number ____________________ for (Description of Contract), and liability arising out of pick up and delivery operations and the operations and the existence of tools, uninstalled equipment and abandoned or unused materials after completion and acceptance or abandonment of all work under this Contract.

2. In consideration of the premium charges at which this policy is written the insurer agrees that in any one suit or suits which may be brought against the named insured arising out of an accident covered hereby, the insurer will not plead the defense that the insured was exercising or had available to it the defense of governmental function, unless the insured shall have in writing directed the insurer to plead such defense, in which event, the insurer will so plead and will defend on such ground.

3. The cancellation clause of insurance policy is changed, in part, to read as follows: In order that the insurance company may cancel this policy, it must give the District of Columbia written notice thereof, stating when, not less than thirty (30) days after receipt of said written notice, such cancellation shall be effective. The written notice shall be mailed to the **Contracting Officer** , District of Columbia, District Building, 14th & E Streets, N. W., Washington, D. C.

4. All premiums to be paid or refunds to be made shall be paid by or refunded to (Name and Address of Contractor).

5. Under the conditions titled, "Inspection and Audit", said inspection and audit shall not apply to the United States.

10. SEQUENCE OF WORK:

The General Sequence of Work under this contract shall be as follows:

1. Initial site preparation
2. Operation of the Sanitary Landfill

3. Completion, that is, preparation of the site for further use.

This general sequence is explained in further detail in the "FINAL PLAN". The design, procedures and operating requirements comprising the "FINAL PLAN" shall be strictly followed unless express written authorization to the contrary is received from the Department of Sanitary Engineering of the District of Columbia.

11. PRE-CONSTRUCTION CONFERENCE:

The District of Columbia may arrange a Pre-Construction Conference with representatives of the contractor, Department of Sanitary Engineering, U. S. Public Health Service, National Park Service, and other agencies, governmental or private, affected by the work to discuss and clarify points at issue or proposed changes to the construction schedule, restrictions and conduct of the work.

12. "REQUIRED EQUIPMENT" FURNISHED BY THE CONTRACTOR:

The contractor shall deliver to the District of Columbia a good title to the equipment listed as "Required Equipment" in the "Schedule of Prices" no later than five hundred and seventy (570) days after receipt of notice to proceed. Said title shall be bonded to the full value of the equipment, stated under the "Schedule of Prices", and shall be certified free and clear of all debts, liens, judgments or other encumbrances.

The equipment furnished by the contractor shall conform to all requirements of the section of the Specifications, entitled "Required Equipment", as to quantity, quality, and conditions of maintenance, inspections and repairs.

13. CONTRACTOR'S DRAWINGS:

Shop drawings shall be furnished by the contractor where specified and where the contractor initiates minor modifications to the specifications or other contract documents. Five copies of the drawings shall be submitted to the Department of Sanitary Engineering of the District of Columbia at least ten (10) working days prior to the date on which the structure, plan, process or equipment represented by the drawing is to be constructed, implemented or employed.

14. RELOCATION OF OPERATION:

Due to the inability to determine the exact quantity of refuse to be handled during the contract period and the exact volume of the compacted refuse, the length of time required to complete the Kenilworth Sanitary Landfill is only approximate. Therefore, the District of Columbia reserves the right to require the contractor to relocate his operation to the area of Oxon Bay.

The contractor shall transport all temporary structures and sanitary facilities, all equipment, including scales, and install such structures and improvements, as required, in a manner similar to that prescribed in the initial phase of construction at the Kenilworth site.

15. USE OF DISTRICT OF COLUMBIA EQUIPMENT:

In the event that the contract time is extended beyond the base bid period of five hundred seventy (570) days, the contractor will be allowed the use of the "Required Equipment" in accordance with the applicable paragraphs of section entitled EQUIPMENT for the duration of the period of contract extension.

The various items of "Required Equipment" shall not be used by the contractor for final completion of any landfill site upon termination of the sanitary landfill operation.

16. PUBLIC RELATIONS-ADVERTISING:

The contractor shall not advertise, erect any sign or in any other way use his operation of the Kenilworth Sanitary Landfill for promotional purposes without the express written approval of the Government of the District of Columbia for each and every separate occasion which may occur.

17. SCALE PIT: Where the term "scale pit" is used throughout the contract documents it shall be construed to mean the total scale support and installation requirements which, when used in conjunction with the hereinafter specified truck scales, will provide a complete and operative unit. The term shall be considered to include any ramp requirements and drainage provisions necessary for the complete units all of which shall be provided at no cost to the Government of the District of Columbia beyond that cost contained in the hereinafter included Schedule of Prices.

18. EMPLOYEES' UNIFORMS: All employees of the Contractor, while on the site, shall be dressed in approved uniforms of the same color and type. Said uniforms shall be kept in a clean, neat and sanitary condition. The Contractor shall submit uniform information to the District for approval.

19. WEIGHING RECORDS: The Contractor shall weigh all vehicles entering the landfill site with refuse. The truck number and a letter code designating the source of the material shall be keyed on the scale recorder and printed together with the weight. Each vehicle that is weighed in shall be weighed out with the weight, truck number and letter code again being printed. The Contractor shall total each tape and compute the total tonnage landfilled each day. The daily

tapes with the tape totals and daily tonnage calculations shall be submitted weekly to the District.

It will not be necessary to weigh ash residue trucks but a daily count shall be made and recorded with truck numbers according to body type. The daily residue volume shall be computed and reported by the contractor from body capacities previously established and agreed upon by the District. A copy of the daily count sheets and daily volume computations shall be submitted weekly to the District.

20. PUBLIC RELATIONS AND NATIONAL SIGNIFICANCE OF PROJECT: The project is to be operated as a Model Demonstration Sanitary Landfill, financed in part by the Federal Government and as such has received much publicity. It is anticipated that the project will generate much local, state and national interest once operations are commenced. One of the main purposes of the project is to demonstrate the feasibility of converting a disgraceful nuisance into a useful public facility in which the neighborhood and the municipality can take pride.

Members of the contractor's organization, when required, shall be available to accompany District representatives to organized meetings of civic groups in order to participate in discussing the sanitary landfill method of refuse disposal.

DEPARTMENT OF SANITARY ENGINEERING

District of Columbia Government

SPECIAL STIPULATIONS

1. Definitions.—Whenever the word "Engineer" is used in the Schedule of Prices, Special Conditions, Special Stipulations or Specifications, it is understood to designate the Chief, Engineers or Inspectors of the Construction and Repair Division of the Department of Sanitary Engineering limited by the special duties entrusted to them.

2. Engineer: To prevent any misunderstanding and litigation, the Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of said work, and shall decide all questions which may arise as to the interpretation of any or all plans relating to the work or the Specifications, and all questions as to the acceptable fulfillment of the Contract on the part of the Contractor; and the Engineer shall determine the amount and quantity of the several kinds of work performed and materials furnished which are to be paid for under the Contract, and such decision and estimate for purposes of partial payment shall be final and conclusive, and such estimate, in case any question shall arise shall be a condition precedent to the right of the Contractor to receive any money due under the contract. Any doubt as to the meaning of or any obscurity as to the wording of these Specifications and Contract will be explained, and all directions and explanations requisite or necessary to complete, explain, or make definite any of the provisions of the Specifications or contract and to give them due effect will be given by the Engineer. The Contractor shall have the right of appeal to the Contracting Officer in the event of disagreement with the decision of the Engineer. (Article 15, Form of Contract).

3. Inspectors: Inspectors employed by the Department shall be authorized to inspect all work and materials furnished. Such inspection may extend to all or any part of the work to the preparation or manufacture of the materials to be used. In case of any dispute arising between the Contractor and the Inspector as to materials furnished or the manner of performing the work, the Inspector shall have the authority to reject materials or suspend the work until the question at issue can be referred to and decided by the Engineer. The Inspector shall not be authorized to revoke, alter, enlarge, relax, or release any requirements of these Specifications nor to approve or accept any portion of the work, nor to issue instruction contrary to the plans and Specifications. The Inspector shall in no case act as foreman or perform other duties for the Contractor, or interfere with the management of the work by the latter. Any advice which the Inspector may give the Contractor shall in no wise be construed as binding the Engineer or the Department in any way or releasing the Contractor from the fulfillment of the terms of the Contract.

4. Prices: All prices must be expressed in figures. All total amounts stated herein will be subject to verification by The Government of the District of Columbia. In the event of discrepancy between unit prices and extended total shown by bidders, the accepted unit prices will be considered as the basis for determining final amount of his bid.

5. Weather: The Contractor shall suspend all work under the Contract when notified by the Engineer that the weather is unsuitable for carrying it on. If the work is allowed during cold or freezing weather, the Contractor shall take such additional precautions as the Engineer shall require, without additional charge, and under no circumstances shall materials be used which have been injured by the weather.

6. Lines: All necessary lines and levels will be given by the Engineer by means of suitable marks and in establishing them the Contractor shall provide such materials and assistance as may be required by the Engineer. All marks are to be carefully preserved, and if destroyed through carelessness the cost of replacing them shall be charged against the Contractor at a fixed price of two dollars ($2.00) for each point, to be deducted from any money found due at final settlement.

7. Drawings: The drawings which illustrate the work to be performed and which show the location are on file in the Department of Sanitary Engineering. Should the position of pipes and other underground objects be found to differ from that indicated on the drawings, or if it should be found necessary to modify the lines or grades of the new work, no additional compensation will be paid for extra labor involved other than the unit prices bid, unless conditions are encountered which in the opinion of the Engineer are materially different from those shown on the drawings or indicated in the Specifications.

8. Order of Work: The work shall be prosecuted in such order as the Engineer shall direct. He shall determine whether the conditions are favorable for working, and may suspend the work or any portion of it whenever, in his opinion, the conditions are such as will not insure first-class construction.

9. Street Occupancy and Traffic: The operations of the Contractor must be so conducted that traffic upon Streets and Railways may be maintained. All material excavated must be removed from the street or deposited as backfilling upon completed work.

10. Pavements: All pavements disturbed for the width of the trenches, as defined in section titled "Measurements" of the Specifications or Special Conditions will be relaid by the District. Macadam, hydraulic base, and sheet pavement material removed shall be piled in suitable places along the line of the work so as not to cause unecessary obstruction of any kind, and during the progress of the work shall be guarded by the Contractor against misappropriation.

Any pavement sidewalk, curbing, gutter, or other highway structure outside the limits prescribed for the trenches, which may be marred, injured or destroyed by the Contractor, shall be replaced with such type of new pavement, sidewalk, curbing, gutter, or other highway structure as may be the Department of Highways and Traffic standard at the time of said replacement. The entire cost of any such replacement shall be charged against the Contractor and deducted from any amount due him. He shall maintain the surface over and within the limits of the trench up to the street grade, as described in section titled "Backfilling" of these Specifications, until such pavement is laid.

In the event that subsequent to the making of any of the replacements provided in this section, and within the period of one year for which the work herein is guaranteed, repairs to such replacements or other work, over or adjacent to the trenches shall become necessary by reason of settlement of the backfilling of such trenches, or otherwise because of the work, all such repairs shall be made in accordance with standard specifications of the Department of Highways and Traffic of the District of Columbia and the entire cost thereof shall be charged against and recovered from the Contractor as provided by law.

11. Protection of Property: Care shall be taken not to move, without the consent of the person owning or controlling them, any trees, fences, water or gas pipes, sewers, drains, conduits, poles or wires for electrical purposes, railways, or other structures; and in crossing or working near them they shall be sustained securely in place until the work is completed, and shall be so treated as to render their condition as efficient and permanent as before.

When approaching any utility structure, the Contractor shall notify the owner thereof sufficiently in advance so that said owner may accomplish any special protective measures deemed necessary. The Contractor shall so conduct his operations as to facilitate access to utility structures by the owners or their agents.

In construction along a right-of-way through public or private property the Contractor shall so conduct his work as not to damage said property and so as to interfere with its ordinary use as little as possible; he shall, upon completion of the work, restore the surface as nearly as possible to the condition in which he found it. No material shall be used or removed from the premises without the consent of the owner or responsible party in charge of the property.

12. Excavation: For payment purposes all excavation will be considered as unclassified and no distinction will be made as to type of material removed from the trench.

13. Contractor's Equipment and Force: All machinery and equipment to be used shall be subject to the approval of the Engineer, shall be of sufficient size to meet the requirements of the work, and shall be such as to produce a satisfactory quality of work. The Contractor shall employ at all times a sufficient force of workmen, of such experience and ability that the work can be prosecuted in a satisfactory and workmanlike manner, and capable superintendents or foremen to represent him on the work, who shall receive and obey orders from the Engineer.

14. Inspection: The Contractor shall, when requested, provide the Engineer with ladders, lanterns, tools, and labor, samples, and other facilities as may be necessary for inspecting material and work.

Imperfect materials or work which may be discovered shall be replaced or corrected immediately on the requirement of the Engineer, notwithstanding that it may have been overlooked by the proper Inspector, and included in a partial payment. Materials condemned or rejected by the Engineer may be at once removed to a satisfactory distance from the work. Any omissions to disapprove the work at the time of inspection or at any time of any monthly or other estimate, shall not relieve the Contractor of any of his obligations, and all work, of whatever kind, which, during its progress and before it is finally accepted may become damaged or prove unacceptable for any cause, shall be removed by the Contractor and replaced by good and satisfactory work. If not removed within twenty-four (24) hours after written notice from the Engineer, it shall be removed by that officer and the cost charged to the Contractor and deducted from any amount due or which may become due him.

15. Sanitary Provisions: The Contractor shall furnish for use of his force on the work necessary toilet conveniences, secluded from public observation. They shall be kept in a clean and sanitary condition and comply with the requirements and regulations of the District. He shall commit no public nuisance.

16. Final Cleaning Up: After completion of the work, and before acceptance and final payment shall be made, the Contractor shall clean and remove from the roadway, sidewalk, parking, lawns, and all adjacent property, all surplus and discarded materials and rubbish, restore in an acceptable manner all property, both public and private, which has been damaged during the prosecution of the work and shall leave the whole in a neat and presentable condition.

EQUIPMENT

1. GENERAL:

The section includes the specifications for equipment to be used in operating the Kenilworth and/or Oxon Bay sites as a sanitary landfill. It is the intent of these specifications to obtain equipment suitable for arduous, heavy-duty service in connection with a model refuse sanitary landfill operation. The equipment furnished must be specifically designed for the use intended. Modified or "built-up" equipment will not be acceptable.

The successful bidder shall purchase all required equipment from an agent or dealer authorized by the manufacturer and employing, on a regular basis, factory or manufacturer-trained mechanics for inspection, maintenance and repair of the equipment.

The contractor shall properly protect the equipment and place it in the charge of competent operators. He shall perform such daily maintenance and upkeep on all required equipment in accordance with the manufacturer's recommendations as to insure minimum wear and maximum service life remaining at the termination of the contract. The required equipment shall be utilized only in connection with the Kenilworth and/or Oxon Bay Sanitary Landfill operations.

2. REQUIRED EQUIPMENT:

The following listed items of equipment shall be purchased by the successful bidder as new units and the title for these items shall be transferred to the Government of the District of Columbia, as set forth hereinafter, at the end of the contract period. Equipment shall be as hereinafter specified.

Required Equipment List:

Equipment Item	Function	No. of Units Required
Motor Grader	Maintenance of haul roads, drainage swales and cover material.	1
Sanitary Landfill Compactor	Spread and compact refuse and stabilize earthen berms.	2
Front End Loader, rubber-mounted	Assist in spreading and compacting cover material and general standby.	1
Tractor Dozer, track-mounted	Spreading and compacting incinerator ash, standby for spreading and compacting refuse and cover material and pusher for scraper.	1
14-18 c.y. Capacity, Self-propelled Scraper	Excavation, transporting and placing of cover material.	1
Water-tank Wagon with pressure pump and hose	Dust and fire control.	1
Fuel Servicing Unit	Servicing and fueling equipment.	1
Scales	Truck weighing	2

3. ADDITIONAL EQUIPMENT:

Equipment items in addition to those listed above will be required from time to time to accomplish the operation in accordance with the attached "FINAL PLAN". Such items as a dragline, additional tractors for spreading and compacting refuse and cover material as well as standby units for single items of required equipment during periods of maintenance and repair shall be provided by the successful bidder and the cost therefor shall be included in the unit price per ton bid.

It is understood that the delivery of some items of "Required Equipment" may not be possible during the initial thirty- (30) day period of initial site preparation. The contractor shall provide, as an integral part of his bid, a schedule of delivery for each item of "Required Equipment" listed hereinafter. In addition, the contractor shall provide the necessary items of "Additional Equipment" required to accomplish the work in accordance with the "FINAL PLAN" while awaiting delivery of the "Required Equipment". All items of "Additional Equipment" shall be of the size and capacity as approved by the Government of the District of Columbia for their intended use. Such "Additional Equipment" shall be provided at no additional cost to the District of Columbia and will be paid for as hereinafter set forth in the section entitled MEASUREMENT AND PAYMENT.

It shall be the responsibility of the successful bidder to provide these necessary additional items of equipment when required. Failure to do so shall be cause for invoking liquidated damages as hereinbefore specified.

4. EQUIPMENT QUALITY:

Unless otherwise specified, all materials used for the manufacture or construction of any items covered by this bid shall be new and of the best quality and the workmanship shall be of the highest grade. The use of the name of a manufacturer or of any special brand or make in describing any item in this bid does not restrict bidders to that manufacturer, or specific brand or make; the reference thereto indicates the character or quality of article desired, but articles on which bids are submitted must be equal to those referred to. Bidders offering any article other than the specific make, brand or manufacture named in this bid must so state in each instance, otherwise their bids will be considered as being based upon furnishing the specific make, brand or manufacture named in this bid.

5. COMPLIANCE WITH REGULATIONS AND CODES:

Vehicles furnished shall meet all requirements of the Departments of Motor Vehicles, District of Columbia, and the States of Maryland and Virginia, and the Interstate Commerce Commission. Items furnished shall also comply with the pertinent codes of the District of Columbia.

6. CERTIFICATE OF COMPLIANCE WITH THE SPECIFICATIONS:

The equipment supplier shall certify that the product offered will comply in every respect with the specifications. In the event that it does not comply, the contractor shall attach to his bid a statement listing in detail definitely wherein the product he proposes to furnish does not comply with the specifications. Where no statement is received, the successful bidder's equipment supplier shall be required to meet every requirement of the specifications.

7. PURCHASE OR LEASE-PURCHASE OF REQUIRED EQUIPMENT:

Ownership of all required equipment, listed under paragraph entitled "Required Equipment", shall pass to the District of Columbia at the end of the base period of the contract, that is, five hundred seventy (570) days. The contractor's purchase costs must be fully liquidated at the end of such period. If the District of Columbia exercises its option to extend the contract beyond said base period, the monthly bid price listed in "Schedule of Prices" for liquidating the cost of the equipment shall terminate, and the contractor will not be entitled to additional payments on these items. The contractor will have the full use of the equipment for conducting the District of Columbia sanitary landfills for any time period that the contract is extended under the aforesaid option.

8. INSPECTION, MAINTENANCE AND REPAIR:

The contractor shall negotiate an inspection, maintenance and repair agreement with the supplier or his authorized representative as approved by the Government of the District of Columbia of all "Required Equipment" listed herein and covering all such equipment. The agreement shall remain in force during the entire period of the basic contract time. The agreement shall be based on anticipated operation of the equipment for eight (8) hours per day six (6) days per week.

The agreement shall include detailed inspections of all equipment after 250 hours of operation or sixty (60) days, whichever occurs first and similar periods thereafter during the agreement. At the termination of the contract, the supplier or his approved authorized representative shall make a final inspection of the equipment and submit to the Government of the District of Columbia a written report concerning the condition of such equipment and outlining any repairs required to bring the equipment performance capability up to the level considered normal for the age of the units. The contractor shall make these repairs before transferring title to the Government of the District of Columbia.

At the time of the inspections outlined above, the supplier or his approved authorized representative shall perform all maintenance. He shall submit a report to the District of Columbia concerning the maintenance and certifying that such maintenance and upkeep are being performed in accordance with the manufacturer's recommendations.

The contractor shall be fully responsible to the Government of the District of Columbia for the total costs of all repairs, including parts and labor, to the equipment listed hereinbefore as "Required Equipment" for the entire period of the basic contract time.

The contractor shall be responsible also for costs of repairs due to fire, theft, accident or vandalism. He shall assume at his expense all costs for tires, grease, fuel, anti-freeze, cutting edges, scarifier or ripper teeth, batteries, headlights, glass breakage, brake linings, cleaning and painting, and other items of maintenance and upkeep normally consumed in day-to-day operations. All maintenance shall be performed in accordance with manufacturer's recommendations.

9. TECHNICAL ASSISTANCE AND EQUIPMENT DATA:

The contractor shall have the supplier of all required equipment, upon arrival of the equipment, furnish instructional service to him by qualified factory-trained personnel as follows:

Operator - One (1) day (8 hours) of demonstration and instruction in the operation of each item of equipment.

Mechanics - Ten man days of 8 hours each for instruction in the maintenance of all equipment.

The contractor shall have the supplier provide to him sufficient operations and service manuals for each item of equipment to allow four (4) copies to be turned over to the District of Columbia. The contractor shall deliver said manuals to the District. The manuals shall contain, in bound form, complete operation instructions, lubrication charts, preventive maintenance checklists and recommendations, and parts lists with full ordering information.

10. EQUIPMENT MAKE AND MODEL:

The contractor shall submit, as an integral part of his bid, the manufacturer's name and model number of each item of equipment offered as "Required Equipment" listed hereinbefore.

11. EQUIPMENT TECHNICAL SPECIFICATION:

A. MOTOR GRADER:

GENERAL: The sanitary landfill motor grader shall be a new, heavy duty, diesel powered unit, with tandem drive wheels. It shall have hydraulic on mechanism operated blade lift, moldboard circle drive, scarifier, center shift and wheel lean. It shall also be equipped with an all-weather cab and various items as described herein.

QUALITY STANDARD: The sanitary landfill motor grader shall be Caterpillar Model 12F or Allis-Chalmers Series B-M-100 or equal.

ENGINE: The motor grader shall be powered by a diesel engine as recommended by the manufacturer with a fly wheel horsepower rating of not less than 115 horsepower at not over 2100 rpm, equipped with air cleaner, oil filter, fuel filter and muffler.

ELECTRICAL SYSTEM: a 12-volt electrical system with a 24-volt "in-seat" direct electric starting system shall be provided.

OPERATING DATA: The clutch shall be oil type, double disc, with an independent pressure system. The transmission shall be constant mesh with helical gears and pressure lubricated with full flow filtered oil. It shall have a minimum of six (6) gears forward and three (3) gears reverse. Controls shall be centrally located for maximum comfort to the operator and shall be protected with a suitable device (standard with the manufacturer) to prevent overloading. The following minimum control functions shall be available to the operator: left blade lift, right blade lift, scarifier, wheel lean, blade side shift, circle shift, hand brake, accelerator decelerator pedal, and throttle control. Steering shall be full hydraulic power steering. Heavy duty, demountable tire rims with six 13.00 x 24 (10PR) tubeless tires shall be self-adjusting four-wheel power brakes diameter 17", width 4" with a separate expanding shoe hand brake. The motor grader shall be equipped with a 12' blade with easily renewable cutting edges. The fuel tank shall have a minimum capacity of 55 gallons.

B. COMPACTOR, SANITARY LANDFILL:

GENERAL: Sanitary landfill compactors shall be new, heavy duty, diesel powered, articulated all wheel drive with spreading blade, cab and various items described herein.

QUALITY STANDARD: The sanitary landfill compactors shall be model SF-17 as manufactured by FWD Wagner, Inc., or equal. Units shall be designed specifically for the service intended. Modifications of units designed for different service and duty will not be acceptable.

ENGINE: The compactors shall be powered by diesel engines with a flywheel horsepower rating of not less than 318 horsepower at not over 2100 RPM.

ELECTRICAL SYSTEM: The unit shall be provided with a 12-volt electrical system with 24-volt "in-seat" direct electric starting.

OPERATING DATA: The units shall have a nominal operating weight of 48,000 pounds with an inside turning radius of 150 inches or less. Axles shall be heavy duty industrial type with planetary reduction at each wheel, arranged for easy servicing. Wheels shall consist of a steel outer drum, welded on trapezoidal steel pads and mounted on air cushion pneumatic tire inner mountings or equal. Removable steel air cushion guards shall be placed so as to protect the pneumatic tire mountings. Fenders shall be provided for all wheels. The transmission shall be automatic power shift with 3 speeds forward and three in reverse. A heavy duty torque converter shall be included as an integral part of the unit. Articulated joints shall be heavy duty, fully and easily adjustable to compensate for normal wear. Units shall have a separate hydraulic system for steering and a completely separate hydraulic system for operating the blade. There shall be two double-acting cylinders and dual cab controls for steering. The blade control shall be mounted in the cab and all pumps, valves, filters and cylinders shall be mounted for easy accessibility and service. The spreader blade and trash guard shall be of heavy duty construction, U-shaped for maximum refuse handling, and nominally 12 feet in length with trash guard being the standard of the manufacturer. Blade height to top of mouldboard shall be not less than 4'-0".

Protection shall be provided for the compactor undercarriage by installation of a steel "belly-pan". In addition, all hydraulic lines shall be armor-wrapped wherever chafing may occur. A fully enclosed, removable, steel operator's cab shall be provided. The cab shall provide adequate room and comfort, shall have easy reach controls and clear vision of gauges, safety steps, adjustable tilt-type swivelled operator's seat, and complete visibility in all directions. Cab shall be insulated and contain a large capacity heater, blower fan, defroster and electric windshield wipers both front and rear. Two electric operating lights shall be provided on the front and two on the back of the machine for night operation. A heavy duty safety belt and an air horn loud enough to be heard above the normal operating noise shall be installed for the safety of the driver. The doors of the cab shall be easily removable.

COMPACTION WHEELS: The compaction wheels are to be equipped with wedge shape, non-directional tamping feet or trapezoidal steel pads.

C. FRONT END LOADER, 5 YD, RUBBER-MOUNTED:

GENERAL: The front end loader shall be a heavy-duty, diesel-powered, articulated unit with all wheel drive, 4 wheels and tires, bucket, cab and various items described herein.

QUALITY STANDARD: The front end loader shall be as normally advertised Caterpillar Tractor Company Model 988, Michigan Clark Equipment Company Model 275 III A, or International Harvester Company Model H-120C.

ENGINE: The unit shall be powered by a diesel engine with flywheel horsepower rating of at least 280 horsepower at 2100 RPM.

ELECTRICAL SYSTEM: A 12-volt electrical system with a 24 volt "in-seat" direct electric starting system shall be provided.

OPERATING DATA: The unit shall have an operating weight of approximately 63,000 lbs. and shall have a tipping load capability of 30,000 lbs. at full turn. The transmission shall be full power shift with at least three forward and three reverse speeds. Automatic no-spin differential torque proportioning shall be provided on one pair of wheels. Heavy duty torque converter shall be included. The axles shall be heavy duty industrial type with planetary reduction at each wheel, arranged for easy servicing. Articulated joints shall be heavy duty, fully adjustable to compensate for normal wear. Tires shall be steel reinforced, puncture resistant "Landfill Tires:," especially designed for landfill operations. Tread shall be traction type. Bucket shall be general purpose type of nominal five cubic yard capacity. The unit shall have separate hydraulic steering and bucket operating systems. Cylinder piston rods shall be chromium plated. Pumps, valves and pistons shall be mounted for easy accessibility and service. In addition, all hydraulic lines shall be armor-wrapped wherever chafing may occur. A fully enclosed, removable, steel operator's cab shall be provided. Cab shall provide adequate room and comfort, shall have easy reach controls and clear vision of gauges, safety steps, adjustable tilt-type swivel operator's seat and maximum visibility in all directions. Cab shall be insulated and contain a large capacity heater, blower fan,defroster, and windshield wipers both front and rear. Two electric operating lights shall be provided both front and rear for night operation and a heavy duty safety belt and air horn shall be installed for the safety of the driver. The front end loader shall have a drawbar hitch suitable for towing.

D. TRACTOR DOZER, TRACK-MOUNTED:

GENERAL: The tractor dozer shall be new, heavy duty, diesel powered, equipped with a spreading blade, cab and various other items as described herein.

MANUFACTURER: The tractor dozer shall be Caterpillar Model D8H, or Allis-Chalmers HD-21.

GUARANTEE: The tractor dozer shall be guaranteed against defects in workmanship and materials for a period of six months. Any defects occurring during this time shall be repaired or replaced at no cost to the owner.

SERVICE: Service shall be available in the Washington, D. C., Maryland, or Virginia area 6 days per week by factory authorized representatives who shall maintain an adequate supply of parts and service facilities.

OPERATING MANUALS: Five bound copies of complete operating and maintenance instructions shall be provided.

QUANTITY: Furnish and deliver to a designated point within a 20 mile radius of Washington, D. C., one tractor dozer ready for operation.

ENGINE: The tractor dozer shall be powered by a diesel engine of a type recommended by the manufacturer with a minimum 270 flywheel horsepower at 1900 rpm maximum. Engine must be equipped with oil filter, fuel filter, air cleaner, and a full pressure lubrication system.

ELECTRICAL SYSTEM AND STARTING OF ENGINE: The tractor dozer shall be equipped with a 12 volt electrical system and a 24 volt "in-seat" direct electric starting system with a minimum 15 amp. generator. Tractor shall be equipped with two headlights and two rear lights with lamp guards.

OPERATING DATA: A single stage torque converter with a planetary-type power shift transmission shall be provided. Sealed type tracks with a minimum of seven rollers on each side shall be provided and shall be equipped with hydraulic track adjusters. The unit shall have hydraulically-actuated oil lubrication clutches and brakes. The tractor dozer shall be equipped with a hydraulically-controlled blade of not less than 13 feet in length and a minimum height of 52 inches. The blade shall be constructed of HT Steel with removable cutting edges and equipped with an integral push block for pushing a scraper. The blade provided shall not weigh less than 11,500 lbs. A fully enclosed, removable steel operators cab shall be provided. Cab shall provide adequate room and comfort for operator and provide maximum visibility in all directions. Cab shall have an insulated roof and contain an adequate heater, defroster, and electric windshield wipers both front and rear. Doors shall be of rigid steel construction and easily removable for summer operation. The tractor dozer shall be equipped with a front pull hook and roller guards.

E. 14-18 C.Y. CAPACITY, SELF-PROPELLED SCRAPER:

GENERAL: Self-propelled Scraper shall be new, heavy duty, diesel powered, wheel-type tractor scraper. It shall be equipped with an all-weather cab and various items as described herein.

MANUFACTURER: Self-propelled scraper shall be Caterpillar Model 621, Allis Chalmers Model 260, International Model 270, or equal.

GUARANTEE: Self-propelled scraper shall be guaranteed against defective material and workmanship for a period of not less than 6 months. Any defects during this time shall be repaired or replaced at no cost to the owner.

SERVICE: Service shall be available in the Washington, D. C.-Maryland area 6 days per week by factory authorized representatives who shall maintain an adequate supply of parts and service facilities.

OPERATING MANUALS: Five bound copies of complete operating and maintenance instructions shall be provided.

QUANTITY: Furnish and deliver to a designated point within a 20 mile radius of Washington, D. C., as designated by owner, one self-propelled scraper ready for operation.

ENGINE: The self-propelled scraper shall be powered by a diesel engine as recommended by the manufacturer with a minimum flywheel horsepower rating of 260 horsepower at a maximum 2500 rpm. Engine must be equipped with air cleaner, oil filter, fuel filter and a full pressure lubrication system.

ELECTRICAL SYSTEM: A 12 volt electrical system with a 24 volt "in-seat" direct electric starting system shall be provided with a minimum 15 amp. generator. Scraper shall be equipped with two headlights and two rear mounted flood lights with guards for easy bowl observation at night. All lights shall have guards.

OPERATING DATA: A single stage torque converter with planetary type power shift and at least five forward gears and one reverse gear shall be provided. Tires shall be standard 26.5 x 29 (24 PR) front and rear. Steering shall be hydraulic, full power, with two double acting hydraulic cylinders. Brakes shall be air actuated, cam operated, expanding shoe type and synchronized to brake scraper first. A fully enclosed, removable, steel operators cab shall be provided. Cab shall provide adequate room and comfort to operator with access to all controls. It shall provide maximum visibility in all directions and all windows shall consist of safety glass. Cab shall have an insulated roof and contain an adequate heater, defroster and electric windshield wipers both front and rear. Cab door shall be easily removable from the cab body. Bowl capacity shall be sized to contain a minimum 14 c.y. struck and 18 c.y. heaped in accordance with SAE Standards. The bowl shall have easily renewable cutting edges. Scraper shall be equipped with front and rear pull hooks, air horn, bucket type foam rubber seat, and nylon seat belt.

F. WATER TANK WAGON:

SERVICE REQUIREMENTS: This truck will be utilized for flushing streets, plowing snow and running on dumps to extinguish fires. Due to heavy traffic and width of streets it is essential that the overall length, width and height, plus wheelbase, cab to rear axle distance, and turning radius be within specified limits.

1. G.V.W.: 38,900 lbs.
2. W.B.: Approximately 159 inches
3. C.A.: Approximately 132 inches
4. TURNING RADIUS: Not to exceed 29 ft. bumper clearance
5. ENGINE: Gasoline or Diesel, minimum piston displacement 500 cubic inches
6. ALTERNATOR: 12 volt, 100 amp/hr.
7. AXLES: Front axle shall have a capacity of not less than 14,000 lbs. on tires at ground. Rear tandem axle double reduction type with a capacity of not less than 30,000 lbs. on tires at ground. Special traction type differential required so that engine power is always directed to rear wheel having the best traction.
8. BATTERY: 12 volt, 70 ampere hour
9. BRAKES: Full air operated, low pressure buzzer in cab, two air reservoirs compressor mounted so as not to interfere with engine overhaul.
10. BUMPERS: Front and rear. Front bumper minimum 7 inches, to extend at least 6 inches beyond cab, to permit snow plow attachment, and attached directly to chassis frame.
11. CAB: Tilt or vertical lift, overall height not to exceed 103 inches; step tread, safety grating serrated

type, seat belts, driver and passenger, marker lights on cab roof front left and right corners.

12. FUEL TANK: Side located, approximately 50 gallon, auxiliary fuel tank in addition to standard tank acceptable.
13. MIRRORS: West Coast type, right and left.
14. SHOCK ABSORBERS: Front
15. SPRINGS: Auxiliary rear springs or their equivalent.
16. STEERING: Power actuated
17. TIRES: 12:00 x 20/14 ply, dual rear with snow/mud tires, spare wheel/rim with tire (same tread as front) to be furnished loose.
18. TOW HOOKS: Front and rear
19. TRANSMISSIONS: Conventional or fully automatic, 5 speeds forward, 1 reverse.
20. BODY: FLUSHER TANK AND ACCESSORIES:

GENERAL: It is the intent of this specification to procure a twenty-five hundred (2,500) gallon tank, centrifugal pump power unit and flushing nozzles, as well as all necessary parts to make the complete assembly ready for operation. The general appearance shall be of a streamline design. It shall have a continuous smooth contour from the cab to the rear of the tank with the power unit pump, completely enclosed within the beaver tail at the rear end of the tank. Suitable skirting of not less than No. 14 USS gauge, auto body steel, beaded or flanged along the bottom edge, shall extend to a line approximately opposite the bottom of the frame line, running from cab to rear without interfering in any way with the operation or the full accessibility of the flushing nozzles. This equipment is to be installed by contractor on the chassis, described in the foregoing specifications. Bidders are invited to inspect the Sanitation Division, D.C., Flusher No. 512 at Mt. Olivet Garage and Shops Building, Mt. Olivet Road and West Virginia Avenue, N.E., Washington, D.C., which is to be considered the basis of acceptable appearance. Side marker lights shall be mounted. Rear lights shall be mounted with license plate frame. Handles for compartments side and rear shall be flush.

POWER UNIT: The power unit shall consist of a separate engine, operating from chassis fuel supply, drive for flushing units, direct drive to centrifugal pump and located within beaver tail of body. Engine shall be located so as to permit easy accessibility for maintenance. Engine shall be internal combustion, 4 cycle, 6 cylinder type, using gasoline as fuel. It shall have a piston displacement of not less than 226 cubic inches. Engine to have rotary pump force feed lubrication; water cooled pump circulation; separate 12-volt starting and generator equipment including battery with controls for full operation of rear motor located in cab of truck to right of driver and within easy reach; carburator with oil bath air cleaner; oil filter; engine governor; oil gauge; radiator; fan; muffler; and metal housing.

WATER TANK: Shall be of oval or semi-rectangular shape, having a water capacity of not less than twenty-five hundred (2,500) gallons to the top of the overflow pipe. The horizontal width shall be approximately eighty-four (84) inches, and the height approximately fifty-three (53) inches. These dimensions may vary, depending upon the height and width of the cab of the particular chassis on which the flusher is mounted. This variation is permitted in order to obtain a semi-streamline appearance. The entire tank shall be made of Tank Quality Grade "A" Steel, and shall be continuously electrically welded throughout by the shielded arc process, using rod of analysis as recommended by the steel manufacturer. The top and sides of the tank shall be not less than No. 10 USS gauge steel in thickness and the bottom plate shall be not less than No. 7 USS gauge steel. The tank shall withstand a static pressure of not less than five (5) psi without the use of any blocking or supports to restrain the tank while under pressure. The end plates and bottom plates shall be continuously electrically welded, both inside and outside. The tank shall be fitted with at least three (3) bulkhead baffle plates to prevent surging of the water. They shall be not less than No. 8 USS gauge steel and shall be properly welded. At least one opening in each baffle shall be of sufficient size to permit a man to pass from one compartment to another. End plates or heads of tank shall be not less than No. 7 USS gauge steel. Tank shall be equipped with clearance lights top, bottom, front and rear sides of skirting. Amber lights in front and red lights in rear. Class A electrically operated signal lights for left and right turns shall be furnished front and rear. The rear lights to be installed in skirting.

TANK MOUNTING: The tank shall be mounted on full-length steel channel sills, welded thereto, to provide even weight distribution over the entire truck frame. Tank shall be further mounted on a structural channel frame to support power pumping unit, skirting, etc. This shall be securely fastened to the truck frame by flexible rubber mounts or heavy coil springs with hardwood cushion strips between the truck frame and the flusher frame.

PUMP HOUSING: The pump housing shall be of beaver tail design at the rear of the tank, and shall be made of not less than No. 14 USS gauge auto body steel. It shall be fitted with side swing doors, opening in the center, each door made in one piece, flanged and braced to give stiffness and rigidity. Also fitted with lock-engaging at top and bottom, and approved "stay-open" device.

TANK INTAKE: The tank filling intake shall be of $2\frac{1}{2}$" pipe size, located at the top rear of tank. A large capacity brass strainer shall be included in the load line, and be easily removable for cleaning.

TANK FITTING: A manhole of minimum of 18" diameter is to be provided at the top of the tank, having a quick opening, with gasket, constructed to relieve when pressure in the tank reaches 5 lb. per square inch.

OVERFLOW PIPE: There shall be provided an overflow pipe at the rear of the tank extending on the inside of the tank from the twenty-five hundred (2,500) gallon water level to bottom, and set in such a manner and of such length that the overflow will not wet the driving mechanism of the truck. Water level tell tale devices shall be located in the tank, one reading of which is to be visible from curb when the tank is being filled and one located in cab of truck--both to be visible day or night. A four-inch brass plug shall be located at the lowest point for draining and cleaning out the tank.

PUMP: The flushing pump shall be a single stage high pressure pump with a vertically split case, having a minimum 4" suction and 4" discharge ports. It shall have 14" diameter bronze fitted impeller. It shall be rated 750 gpm at 1750 rpm and be capable of maintaining 60 lb. pressure pumping 600 gpm at 1750 rpm with 4 nozzles operating. Pump shall be directly connected to the engine with a shock absorbing, self-aligning torque coupling to eliminate difficulties due to mis-alignment and shock. The interior of the pump shall be readily accessible for service without disturbing discharge connections.

Tank to have 8" diameter sump, with 4" brass drain plug for clean-out, to insure supply of water when working on grades.

FLUSHING NOZZLES: Four flushing nozzles and two standard Fire Department nozzles with 1 inch orifice shall be furnished. One flushing nozzle is to be placed forward of each front wheel of the chassis outside of the frame but to the rear of the front bumper. The other two with outlets to be placed as directed by the Master Mechanic of Division of Sanitation, Mt. Olivet Garage and Shops Building, Mt. Olivet Road and West Virginia Avenue, N.E., Washington, D.C. Flushing nozzles to be made of brass in two pieces, horizontally split, the entire lower half of nozzles to be machined inside. Lower half of nozzle to be attached to upper half of nozzle with sherardized cap screws and lock washers. All nozzles to be set so as to discharge water on the street at an angle which will effectively clean all classes of street pavement now in use in the District of Columbia. Each nozzle to be provided with lock brass washers to prevent nozzle from jarring out of position after being attached. Nozzle must produce a uniform flushing stream from end to end, and the stream shall be effective for a distance of eighteen (18) feet with two (2) nozzles in operation when discharging water as provided in these specifications.

CONTROL: Each flusher nozzle to be controlled by a separate control switch located in cab of truck. The flusher valve control shall be of the compressed air type and include a separate air control valve for each nozzle. The flusher valve shall be operated from the cab of the truck. The air supply shall be so arranged that use of the air for valve operation will not drain the reservoirs of the air brake system below safe braking pressures. The flusher valves shall be of the gate valve type

(Clayton 2", or equal) operated by air equipment from the cab of the truck. The valve control shall operate against water pressure up to 95 psi. The complete air control system shall be Clayton, or equal, and is to be guaranteed by the manufacturer for at least one year. The manufacturer of the devices shall furnish installation supervision.

FILLING HOSE: The filling hose shall be similar to that used by the District of Columbia Fire Department, two and one-half ($2\frac{1}{2}$) inch fire hose with a length of approximately eighteen (18) feet with necessary couplings; threads to be $2\frac{1}{2}$" National Standard Fire Thread.

PUMP INLET STRAINER: An approved strainer shall be furnished between the outlet of the tank and the inlet of the pump that will not interfere with the suction of the pump and which will catch materials that would not pass through the openings in the nozzles.

SKIRTING: Skirting on the body shall have wheel housing installed over rear wheels, which shall extend to the bottom of the skirting; it shall be of not less than 14 USS gauge. Skirting shall not extend in width beyond the outer edge of tire thread.

REAR FENDERS: Rear fenders shall be of not less than No. 14 USS gauge. Fenders shall not extend beyond outer edge of tire.

PIPE CONNECTIONS AND DRAINAGE: All necessary pipe connections, gaskets, washers, valves, washer nozzles and all appliances that may be necessary to fully perform the functions of the apparatus shall be furnished. Drain cocks shall be provided wherever necessary to completely drain the pump system and water gauge line.

G. FUEL SERVICING UNIT: The cab and chassis of this item shall be in accordance with the applicable provisions of Federal Specification KKK-T-701b as amended and the following minimum specifications:

LUBRICATING AND FUEL SERVICING UNIT, TRUCK MOUNTED: In accordance with Military Specification (Mil-T-82073) 22 Nov. 1965, as modified and supplemented in the following:

Delete all items on Pages 1 through 6 and substitute prepared specifications.

Page 7 - Delete first three items - (c), (d), (e).

Page 9 - Delete Paragraph 3, 4,12 waste oil tank.

Page 14 - Delete Paragraph 3,4,19,1 compressor unit for Type A truck.

Page 15 - Delete Paragraph 3,4,20,1 and Paragraph 3,4,30,2 Type B truck.

Change capacities to read: 220 gallons of gasoline and 500 gallons of Diesel Fuel.

Page 18 - Delete Paragraph 4,3,6.

Page 19 - Delete Section 5.

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SCOPE: This specification covers commercial type truck cab and chassis equipped with a custom fabricated lubricating and fuel servicing facilities necessary to provide complete service to equipment in the field.

CAB AND CHASSIS REQUIREMENTS:

a. Minimum 19,000 G.V.W., 4 x 2 Truck chassis
b. W.B., approximately 169"
c. Engine: Gasoline, min. 190 B.H.P.
d. Alternator: 50 amp. (minimum)
e. Axle Capacities: Front axle 5500 lb. minimum
f. Battery: 12 volt, 70 amp./hr.
g. Brakes: Hydraulic with power assist.
h. Springs, front: 6300 lb. capacity
i. Wheels: Disc (Budd) Dual rear tire, size 900 x 20 12 ply
J. Frame: Steel channel re-enforced w/combined section modulus not less than 16.34.
k. Towing Hooks: Two (2) Front Hooks installed under bumper and two (2) rear hooks on chassis.
l. Cab: Conventional.
m. Painting: Unit shall have two (2) coats of Primer w/white automotive enamel, Federal Standard 595, color code 17875.
n. Vehicle shall have under coating protection.
o. Steering: Power assist.
p. Transmission: Five speed snychromesh, direct.
q. Mirrors: Right and left outside West Coast style.
r. Turn Signals: SAE class A, Type I with heavy duty flasher having left, right and four (4) flasher positions.
s. Rear Axle: Non-spin type.
t. Spare Wheel and Tire shall be furnished.
u. Special wrench to remove axle nuts and lug wrench shall be furnished.
v. Heavy duty heater and defroster.

LUBRICATOR-FUEL UNIT:

a. The body shall be of all steel construction. Deck shall be no less than 3/10" thick non-skid safety plate. To be all welded construction platform is to be bolted to truck frame rails.

b. Safety Features: All exposed parts of the equipment that are subjected to high operating temperature or that are energized electrically shall be insulated fully enclosed or guarded, all moving parts so located to be a hazard to operating personnel shall be fully enclosed or guarded.

c. Ease of Maintenance: The truck shall be so designed and constructed that normal adjustments and repairs can be readily accomplished with normal hand tools.

d. Drum and Container Installation: Drum tops, anchor rods with eye bolts and fastening nuts, and drum locators shall be provided for the following standard:

Drum Containers:	1 ea.	Chassis Grease	400 lb. drum
	1 ea.	Hydraulic Fluid	400 lb. drum
	1 ea.	Engine Oil	400 lb. drum
	1 ea.	Gear Lubricant	400 lb. drum
	1 ea.	Automatic Transmission Oil	400 lb. drum
	1 ea.	Used Oil	400 lb. drum

The flanged drum tops for 55 gallon containers shall be made of sheet steel not less than 0.119 inch thick and 35 lb. container tops shall be not less than 0.0598 inch thick steel.

e. Lubricant and Air Hose Rails, Hose: Reels for lubricant hoses and air hose shall be manufacturers current standard heavy-duty, spring operated, automatic retractable type and shall consist of the following:

1. Air hose reel
2. Chassis grease reel
3. Hydraulic fluid hose reel
4. Gear oil hose reel
5. Engine oil hose reel
6. Automatic transmission oil hose reel

f. Floodlights: Unit to be equipped with 1500 watt generator, gasoline engine driven, with one flood light stand having three directional flood lights.

H. SCALES.

GENERAL: Scales shall be portable, motor truck scales, easily transported and installed, and constructed for heavy duty use in accordance with the standards of the Scale Manufacturers Association, Inc.

QUALITY STANDARD: Scales shall be as manufactured by Fairbanks Morse Weighing Systems, Howe Richardson Scale Company or Toledo Scale Company.

CAPACITIES: The motor truck scale shall have a rated capacity of 50 tons with a minimum platform size of 50 feet by 10 feet. The weighing mechanism shall be guaranteed to have an accuracy of plus or minus 0.1% of the vehicle weight.

MOTOR TRUCK SCALES: Two (2) portable motor truck scales shall be furnished and installed. The levers shall be fabricated steel encased in a heavy duty steel frame with self-gauging pivots and bearings of hardened, high strength steel. The truck platform shall be designed to accept 10 foot long timbers.

The scale cabinet shall be factory finished, suitable for location within the scale house. It shall have a dial type weight indicator not less than 20 inches in diameter graduated in 20 lb. increments to 24,000 lbs. Two tare beams shall be provided in an enclosed lockable cover. The capacity of the tare beams shall be 25,000 lbs. Four unit weights of 20,000 lbs. each shall be automatically applied as the vehicles move onto the scale.

An automatic analogue-digital recording device shall be mounted on or contained in the cabinet. The record shall print the full indicated weight legibly on an original and four carbon copies in characters not less than 1/4 inch high. The recorder shall also print the time and date of each weighing and the identification code of the truck on the same line. For identification, the device shall have six banks of numeral keys and one bank of 10 alphabetical keys. A strip record of each weighing with date/time and identification code shall be provided in a locked portion of the recording device.

The scale and recorder shall operate on 120 volt, single phase, 60 cycle electric service. A manual crank shall be furnished to cycle the recorder and apply the unit weights in the event of a power failure.

INSTALLATION: The contractor shall transport the scales to the site and install them on reinforced concrete pads with necessary supports, in accordance with approved shop drawings. Approach and exit ramps or aprons shall be provided to reduce impact of the moving vehicles. Suppliers of the scales shall furnish trained mechanics for calibration, start-up and instruction for at least two separate periods of eight hours duration each.

MEASUREMENT AND PAYMENT

1. GENERAL:

It is intended that all work specified herein and required to meet the operating requirements set forth in the attached "FINAL PLAN" shall be bid on as a complete contract for which payment will be made at the various lump sum and unit prices set forth in the attached "SCHEDULE OF PRICES" and in accordance with the conditions set forth herein. When the term "plans and specifications" is used throughout this section, it is intended to cover all plans and specifications, including information contained in the accompanying "FINAL PLAN".

Within two weeks after receiving written notice to proceed, the contractor shall submit, for approval, to the authorized representative of the Government of the District of Columbia an itemized breakdown of the various lump sum items in order to facilitate the determination of the value of the work performed for periodic payment.

Partial payments will be made in accordance with the applicable sections of the section entitled GENERAL PROVISIONS.

In the event that the basic Contract time is altered as provided for hereinbefore, the basic unit prices for items 6, 7 and 8 shall hold where applicable. Lump sum items 2, 4 and 5 shall be adjusted by adding one-eighteenth of the lump sum bid under the basic Contract for each month of extension beyond the basic Contract time.

2. ITEM 1: SITE PREPARATION:

Under this item shall be included all items of site preparation set forth in the plans and specifications and shall include the extinguishing of all existing fires, extermination of vectors, constructing entrance beautification, access road construction, site fencing, erection of signs, extending utilities to operating facilities, earthen berm construction, installation and ultimate removal of the physical facilities, covering exposed refuse and ash residue, constructing drainage ditches, constructing sight barriers and other items required to prepare the area for a model sanitary landfill operation. The work included under this item is to be paid for at the lump sum price bid.

A breakdown of the lump sum bid into the various items of work required shall be submitted as set forth hereinbefore. The breakdown shall be prepared in sufficient detail to allow a fair evaluation to be made of the quantity of work performed as the project progresses.

3. ITEM 2: PHYSICAL FACILITIES:

The physical facilities such as scale office. general office sanitary facilities and maintenance facility shall be provided as set forth hereinbefore. for the operating period only, at which time they shall be removed from the site. The units may be rented or purchased by the Contractor but shall remain in his care and be his responsibility for the term of the Contract.

The Contractor shall provide these temporary structures for the lump sum price bid for the period of the Contract. Compensation shall be made at the rate of one-eighteenth of the lump sum price bid for each of the eighteen months of the Contract which period shall begin, thirty (30) days from receipt of written notice to proceed or upon completion of the total facility installation in the event that the total facility has not been completed within the original thirty (30) day period.

In accordance with the foregoing requirements, the contractor shall furnish a breakdown of the lump sum bid for this item. The breakdown shall show the price bid for each item of equipment as a separate item of the breakdown.

4. ITEM 3: REQUIRED EQUIPMENT:

Included under this item are all of the items of equipment listed hereinbefore as "Required Equipment" and which shall become the property of the Government of the District of Columbia upon completion of the basic Contract period.

In accordance with the foregoing requirements, the Contractor shall furnish a breakdown of the lump sum bid for this item. The breakdown shall show the price bid for each item of equipment as a separate item of the breakdown.

The Contractor shall be compensated for the required equipment at the lump sum price bid in equal monthly installments of one-eighteenth of the total lump sum price bid.

5. ITEM 4: EQUIPMENT INSPECTION, MAINTENANCE AND REPAIRS:

Under this item shall be included the cost for providing the equipment inspection, maintenance and repair service as set forth hereinbefore for the "Required Equipment" only. Any cost for providing "Additional Equipment" as defined hereinbefore shall be included in the applicable unit price for disposal and shall not be included in this item.

The Contractor shall be paid for this item at the lump sum bid in equal monthly installments of one-eighteenth of the total lump sum bid.

6. ITEM 5: BASIC QUANTITY OF MIXED REFUSE:

Under this item is included the payment for the sanitary landfilling of the basic quantity of mixed refuse guaranteed for delivery to the site, including "Additional Equipment," fuel, labor, utilities and all incidental costs. The lump sum price bid shall be based on receiving a quantity of 3600 tons per 6-day operating week for the basic contract period. Daily variations within this period shall be considered as part of the basic quantity until a total of 3600 tons is received in a given 6-day operating week. The quantity shall be determined by actually weighing the refuse on the hereinbefore specified truck scales. The lump sum price in the attached "SCHEDULE OF PRICES" shall be determined for a total contract quantity of 280,800 tons.

The Contractor shall be paid on the basis of the lump sum bid for this item, computed as set forth above, in order to serve as a guaranteed income.

Monthly payment for this item shall be paid at the rate of one-eighteenth of the total lump sum bid for the basic Contract period.

7. ITEM 6: EXCESS REFUSE QUANTITY:

Under this item is included the sanitary landfilling of the mixed refuse quantity received at the site within a 6-day working week in excess of the basic 3600 tons covered in Item 5 above, including "Additional Equipment," fuel, labor, utilities and all incidental costs not otherwise covered. For purposes of bid evaluation, a quantity of 900 tons per week for the basic Contract period shall be used on the attached "Schedule of Prices".

The Contractor shall be paid for each ton of refuse received in excess of 3600 tons in the given 6-day working period at the unit price bid in the "SCHEDULE OF PRICES" as determined by actually weighing the refuse on the hereinbefore specified truck scale.

8. ITEM 7: INCINERATOR ASH RESIDUE:

Included under this item is the placing, compacting and covering with clean earth all incinerator ash residue delivered to the site by the Government of the District of Columbia for the unit price bid. The unit price shall include "Additional Equipment," fuel, labor, utilities, placing earth cover and all incidental costs not already paid for under another item.

The Contractor shall be paid for each cubic yard of ash residue delivered at the unit price bid. The quantity for payment shall be based on actual cubic yards of residue measured in place on the residue truck and agreed upon at the time of delivery by the authorized representative of the Government of the District of Columbia and the Contractor. In the event of disagreement, the load or loads in question shall be struck level and measurements recorded.

9. ITEM 8: SITE COMPLETION-SEEDING:

Under this item is included the final preparation of the cover material, placement of sewage sludge, fertilizing, the seeding operation and the growing of grass to the point of acceptance by the National Park Service of the U. S. Department of the Interior as set forth hereinbefore. This item does not include items of facility removal covered under another item of this section.

The Contractor shall be paid for work covered by this item as the unit price bid per acre of actual surface area measured in place along the slopes upon acceptance by the National Park Service.

10. ITEM 9: RELOCATING THE OPERATING FACILITIES:

During the basic contract period, it may become necessary to relocate the operation to the vicinity of Oxon Bay where the operating conditions and procedures will be essentially the same as those at the Kenilworth site. Under this item is included the cost for relocating the physical facility, including offices, buildings, weighing facilities and sanitary facilities to the Oxon Bay site as set forth hereinbefore. This item shall include the furnishing of labor, tools and equipment necessary to disconnect, dismantle and otherwise remove the physical facility, transport it to the new location and erect it ready for use. The item shall include the installation of the necessary utilities including connection to water service provided by others to within 50 feet of the facilities. This item shall not include general landfill site preparation in the fill area, fencing or berm construction.

The Contractor shall be paid for this item at the lump sum price bid as shown on the attached "SCHEDULE OF PRICES".

The Contractor shall provide a breakdown of this lump sum cost as set forth hereinbefore.

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